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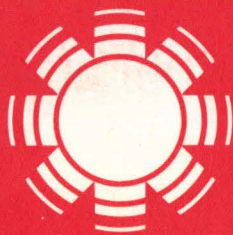
SOLAR ENERGY RESEARCH INSTITUTE
Solar Energy Information Center

AUG 5 1981

GOLDEN, COLORADO 80401

A Guide to Exporting for U.S. Solar Companies

Peter Thompson and
the International Division



SERI

Solar Energy Research Institute

A Division of Midwest Research Institute

1617 Cole Boulevard
Golden, Colorado 80401

Operated for the
U.S. Department of Energy
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A GUIDE TO EXPORTING
FOR U.S. SOLAR COMPANIES

PETER THOMPSON AND THE
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INTRODUCTION

There are two simple reasons why U.S. manufacturers should export—more profits and more jobs for Americans. More than this, exporting provides a broader marketing base and results in greater company growth. Until recently only a few medium-sized and smaller U.S. firms have entered the foreign marketplace. That tide has changed. Some 10,000 small firms, those with fewer than 100 employees, now export. Export markets have become major growth areas for these firms.

Besides the fundamental profit motive, other reasons for entering the export market are:

- Overseas markets may be receptive to solar systems sooner than in the United States;
- Increased markets will justify growth in plant capacity;
- Recent currency fluctuations provide a competitive advantage to American-made products;
- American technology is favored in many foreign markets;
- Export markets offer an expanded sales base to protect against regional or national business cycles;
- Exports allow a seasonal business to operate at higher capacity by extending production schedules;
- Exports can extend the useful life of a product or technology.

A firm that has been successful in the domestic market has every likelihood of success in international markets. Selling abroad will require the same energy, determination, advance planning, market research, and attention to detail. Preliminary considerations to entering international markets include:

- A commitment to export must be made by the Chief Executive and be communicated to the entire company;
- Responsibility for export planning and exporting must be assigned to one person;
- An export marketing plan must be developed (see Business Counseling Service of the Department of Commerce and the Small Business Administration). This plan should include an export operations budget, an assessment and selection of export products, an identification of two or three initial foreign markets, and a foreign marketing strategy.
- The fundamental marketing strategies of direct sales, indirect sales, licenses, and joint ventures must take into consideration that overseas marketing costs will be significantly higher.

Once the commitment to export has been made, decisions on "how" to export and "where" to export are primary goals. This manual was assembled to provide some basic information to answer the "how" and "where." It provides:

- Information concerning the services which are currently available to facilitate entry into foreign markets, and
- The basic social, economic and radiation data on over 70 foreign markets.

SECTION 1.0

EXPORT SERVICES

HOW TO EXPORT?

As indicated earlier, thousands of small companies are beginning to enjoy expanded markets for their products. The U.S. government has a number of services to assist a company which has made the decision to export. This section provides a listing of some of the agencies with services designed to render assistance.

1.1 U.S. DEPARTMENT OF COMMERCE

The U.S. Department of Commerce (DOC) has a primary mission to assist American businesses currently exporting or wishing to do so. The 43 district offices of the Department of Commerce located throughout the United States are all qualified to assist an American firm in: (1) entering the export field; (2) expanding overseas sales; (3) locating an overseas agent or distributor; (4) licensing a product for foreign manufacture or; (5) negotiating a joint venture. The addresses of all 43 offices are listed in the Appendices.

Department of Commerce offices provide the following services.

1.1.1 Business Counseling Services

For a small solar company or a large sophisticated conglomerate, the first step to exporting is an understanding of the required commercial commitment and the development of a commensurate marketing strategy. District officers of the DOC will provide guidance and counseling in these determinations; identify foreign markets, suggest possible agents or distributors; provide information on sources of credit and insurance; and review a wide range of current foreign projects under consideration by the World Bank, the Inter-American Development Bank, the Asian Development Bank, and the United Nations Development Programme. This service is designed to give a businessman the maximum amount of guidance in developing an export strategy.

1.1.2 Foreign Traders Index/Export Mailing List Service

The Foreign Traders Index is a master computer file containing information on more than 150,000 types of firms, agents, representatives, distributors, manufacturers, service organizations, retailers, and end users of American products and/or services in 130 countries. Data from this Index are available to U.S. businessmen in three forms:

- Exporting Mailing Lists are specially targeted retrievals for individual requestors wishing to obtain lists of foreign companies in selected countries by commodity classification. Lists are available as gummed mailing labels or printouts, and include the name and address of the firm, the name and title of the executive officer, the type of organization, the year established, the relative size, the number of employees and sales personnel, and the product or service codes by Standard Industrial Classification (SIC) number.

- Data Tape Service is designed to allow U.S. firms having their own computer facilities to purchase magnetic tapes containing the information on firms included in the Foreign Traders Index. Information may be requested for all or selected countries.
- Trade Lists are: (1) lists of controlled trading companies in those countries where state-owned organizations conduct foreign trade; or (2) lists of businesses in selected development countries.

1.1.3 World Traders Data Reports (WTDR)

World Traders Data Reports offer a more detailed description of selected foreign firms. When a particularly interesting firm is identified from the Foreign Traders Index or the Export Mailing List, a WTDR can provide expanded information on the company's organization, year established, relative size, number of employees, general reputation, territory covered, languages preferred, products handled, financial references, trade references, and a general narrative on the firm's reliability. If a firm is not on file, the DOC will prepare the information.

1.1.4 Agent/Distributor Service

This service is used to directly identify agents and/or distributors for U.S. products and services. U.S. Commercial Officers overseas will supply up to six foreign firms interested in a company's proposal. Commercial District Officers will then guide and assist in the evaluation of any business relationship under consideration.*

1.1.5 The Trade Opportunities Program (TOP)

This program furnishes U.S. businesses with specific solicitations from overseas buyers (private and government) as well as notices of foreign companies offering to represent U.S. firms. American businesses subscribe to this service and indicate the product categories, type of opportunities, and countries for which they wish to receive leads. Leads reported from overseas are automatically matched, separated, printed, and mailed to appropriate subscribers. These leads are generated by more than two hundred American embassies and consulates.

1.1.6 New-Product Information Service (NPIS)

This service is designed to help "new-to-export" companies publicize the availability of their U.S. products in foreign markets. Product information selected for this service is published in the "Commercial News, USA," which is distributed to 240 U.S. embassies and consulates. The information is then translated and printed in eighty-five commercial newsletters distributed to over 100,000 foreign business and government officials.

The above services are only a few of those provided by the DOC. Other services and publications which the District officers can provide include:

*See Appendices for correct mailing procedures.

- The Foreign Buyers Program
- Product Marketing Service
- Global Market Surveys
- Foreign Market Reports
- Overseas Business Reports
- Country Sectoral Surveys
- Market Share Reports
- Commerce Business Daily
- U.S. Trade Missions and Seminars
- Catalog Shows
- International Marketing Centers
- Foreign Trade Zones

1.2 EXPORT-IMPORT BANK OF THE UNITED STATES

The Export-Import Bank of the United States (EXIMBANK) has a primary function to facilitate the export trade of the United States through a variety of financial support programs. EXIMBANK extends and guarantees credits to overseas buyers of American goods and services; it guarantees medium-term exporter credit; it insures short- and medium-term exporter credit; and it discounts export debt obligations held by commercial banks. These basic services are designed to complement, not compete with, the services of private commercial banks.

EXIMBANK's charter states these basic operating principles: loans should generally be for specific purposes and should offer reasonable assurance of repayment; fees and premiums charged for guarantees and insurance should be commensurate with the risks covered; assistance is limited to transactions supporting exports only from the United States; and terms-of-credit support is limited to the normal for specific goods in international trade.

1.2.1 Direct Loans for Foreign Buyers

If a foreign buyer plans to procure equipment of sufficient cost from a U.S. supplier, a direct credit from EXIMBANK, coupled with commercial bank participation, may be the most appropriate method of financing. In general, an EXIMBANK credit will only finance the dollar cost of the capital goods and related services. This program is designed to provide long-term financing for multimillion dollar product sales. Small suppliers often benefit from subcontracts, but they seldom are involved as primary suppliers.

1.2.2 Guarantees and Insurance

More than 50% of the guarantee and insurance authorizations of the EXIMBANK support export sales of \$200,000 or less and can directly benefit small exporters. All of these programs involve active credit participation by U.S. commercial banks.

Basically, the EXIMBANK provides guarantees and the Federal Credit Insurance Association provides insurance to overcome the risks involved in extending credit to unknown foreign buyers in developing markets. The risks covered are: (1) commercial risks (i.e. insolvency of foreign buyer or protracted default) up to 90% of the financed portion; and (2) political risks beyond the control of the buyer or seller (i.e. war, revolution, revocation of import licenses, expropriation, etc.) up to 95% for short-term sales and 90% for medium-term sales.

Under the Small Business Program, foreign buyers must make a cash payment of at least 15% of the invoice value, and exporters must carry, at their own risk, at least 10% of the financed portion throughout the credit period. EXIMBANK will cover 100% of the political risk and 95% of the commercial risk.

1.2.3 Cooperative Financing Facility

After a cash payment of a least 15%, EXIMBANK will lend to a cooperating financial institution outside of the United States, one-half of the funds required for a purchase from the U.S. supplier. The cooperating institution, in turn, is required to lend the full amount to its customer.

1.2.4 Small Business Advisory Service

To assist smaller firms, EXIMBANK also provides information on the availability and use of export credit insurance, guarantees, discount loans, and foreign bank credits supporting the sale of U.S. goods and services abroad. Direct telephone inquiries are welcome: (202) 5667-8990.

1.3 U.S. SMALL BUSINESS ADMINISTRATION

The U.S. Small Business Administration (SBA) offers prospective small exporters assistance in entering the field of international trade through management and technical assistance programs. Financial assistance for current or prospective exporters may also be available.

SBA Export Counseling Services are available at no cost to eligible recipients and may include any or all of the following sources.

1.3.1 Service Corps of Retired Executives (SCORE) and Active Corps of Executives (ACE)

These programs are available to help the small business entrepreneur make the important preliminary assessment of export potential. Since a basic requirement for successful overseas sales is a strong domestic operation, these executive volunteers can help a small business client identify managerial, financial, or technical problems which must be initially solved, and can then assist in developing a basic Export Marketing Plan. This plan includes identifying products most appropriate for export; the best market locations; the best market penetration methods; and information on licenses, transportation, advertising, promotion, pricing, financing, and relevant government policies.

1.3.2 The Small Business Institute

The Small Business Institute (SBI) program provides senior and graduate level international business students who can develop export marketing feasibility studies for "client" firms. Programs can be identified based on the Export Marketing Plan, specific country location, potential overseas demand, channels of distribution, marketing techniques, and financing procedures.

1.3.3 Call Contract Program

The Call Contract Program enables small or minority businesses requiring highly sophisticated marketing information or production technology to obtain counseling to identify and service overseas markets. This specialized export assistance is provided at no cost to eligible clients.

1.3.4 Financial Assistance to Exports

All aspects of the SBA's financial assistance programs are delegated to local field offices. While the SBA does not have a specific program for export lending, it is eager to promote small business participation in international trade. During FY 1979, for example, the SBA restructured its lending priorities to provide up to \$100 million of its loan guaranty authority for the use of small businesses in export-oriented activities. Since SBA's financial assistance programs are restricted to providing loans and loan guarantees for firms located in the United States, its possession, and territories, the Agency is unable to provide financial assistance for the establishment of overseas joint ventures.

By law, the SBA cannot make a loan if a business is able to obtain funds from a bank or other private financial institution; therefore, each prospective applicant must examine his or her own resources prior to applying for SBA financial assistance. The SBA, like all lending institutions, has certain credit requirements all applicants must meet. Under the Agency's Business Loan Program, all loans must be of such sound value or so secured as to reasonably ensure repayment. In effect, this means that each applicant must have a reasonable equity investment, adequate collateral, and be able to furnish evidence of the firm's ability to repay the loan and other outstanding debts from the firm's earnings.

The supply of direct SBA loan funds, however, is very limited. For many years, the SBA has emphasized bank participation with SBA guaranty authority. In fact, over 90% of the Agency's regular business loans are made under the guaranty plan. This plan provides for an SBA guarantee of up to 90% of the loan amount or \$500,000, whichever is less.

Funds may be used to purchase machinery, equipment, facilities, supplies, or materials needed to manufacture or sell products overseas, as well as for working capital. Working capital loans may be used to defray the costs of developing foreign markets. Specifically, this can include costs for professional foreign marketing advice and services, foreign business travel, shipping sample merchandise abroad, shopping foreign markets, participation in overseas trade shows and international fairs, foreign advertising, preparation of promotional materials, and other related purposes.

Through its Guaranty Loan Program, SBA can assist a commercial bank in providing short-term working capital to a manufacturer for the additional labor or materials required to secure an export sales contract. This contract should be covered by a Foreign Credit Insurance Association Policy held by the exporter or the commercial bank.

Since private lending institutions analyze loan requests under the Guaranty Program according to their own credit policies, a well-developed business proposal should be completed. Such proposals should at least include:

- current and historical financial statements,
- descriptions of the use of the proceeds of the loan,
- projected earnings statements, including the increased debt service,
- supporting documentation on which expanded revenues are based.

It would be helpful to also provide information on the amount and types of collateral, financial statements of the business principals, and past experience in the field. Since the information needs of private financial institutions vary, each applicant should be aware that additional data may be required.

1.4 OVERSEAS PRIVATE INVESTMENT CORPORATION

The Overseas Private Investment Corporation (OPIC) offers qualified U.S. businesses appropriate guidance, counseling, and financial support in determining how and where to invest in undeveloped countries. Insurance protection and financial services are available during project development and operation. Through OPIC, the federal government encourages and assists U.S. private overseas investments, including investments in distributorships owned by U.S. manufacturers, as long as these investments are consistent with both the United States' and the developing nation's economic interests. The agency places special emphasis on projects sponsored by small- and medium-sized American business investors.

All applications for OPIC financial insurance are reviewed to assure consistency with host country aims and U.S. foreign economic policy. Approved projects must offer potential benefit to the host country in such areas as job creation, skills training, import savings, export earnings, and tax revenues. They also are reviewed to ensure that the United States gains net benefits in expanded trade, employment, access to needed materials, and investor earnings.

1.4.1 Target Missions

Target missions are conducted with on-the-spot studies by OPIC officials in selected countries. These are followed by investor identification and project brokering in the United States designed to match potential projects with qualified investors. OPIC then organizes group visits by U.S. business executives to selected countries, where they meet host country officials, local businesspersons, and U.S. embassy personnel and review areas of investment opportunity. These missions have been received enthusiastically by medium and small companies.

1.4.2 Feasibility Studies

On a selective basis, OPIC will enter into cost-sharing arrangements with a U.S. firm to investigate and study the feasibility of an opportunity identified through the firm's resources. To encourage investment in poor countries, feasibility study funds are available to companies of specific size in host countries having a specific per capita income. However, smaller U.S. firms are eligible for feasibility survey assistance in all countries in which OPIC operates. To receive such assistance, the U.S. firm must have a sound operating record and demonstrate managerial, technical, and financial competence to implement the project if it proves feasible.

The maximum OPIC participation is \$50,000 or up to 75% of the total eligible costs of the study as formally budgeted and agreed upon by the firm and OPIC, whichever is less. If a project results from the study, the costs of the study are expected to be capitalized as part of the overall projects costs. If a decision not to invest is reached, OPIC will reimburse the sponsor for the agreed portion.

1.4.3 Insurance Protection

OPIC's political risk insurance is often an important factor in an investor's decision to commit funds to projects in developing nations and to a financial institution's participation in project financing.

OPIC provides insurance against three types of risk: (1) currency inconvertibility, (2) expropriation, and (3) loss or damage caused by war, revolution, or insurrection.

Coverage extends to 90% of an investor's equity, debt, or other form of exposure. Typical insurance contracts lasts up to 20 years at a combined annual premium of 1.5% for all three coverages, although in most cases any one or a combination of the three coverages may be taken. OPIC insures new investments or the significant expansion or modernization of an existing enterprise. In all cases, foreign government approval is a prerequisite to OPIC insurance.

1.4.4 Project Financing

As a source of medium- and long-term funds for project financing in countries where conventional financial institutions are often reluctant to lend, OPIC can provide a portion of a project's debt requirements. OPIC's financing commitment in a new venture is usually 35%-45% of total project costs, not to exceed 50%.

OPIC participates in project financing through:

- Loans from its Direct Investment Fund, generally ranging from \$200,000 to \$3 million, repayable over a term from 5-12 years following a suitable grace period, with interest rates depending on OPIC's assessment of the financial and political risks involved;
- Guarantees of loans made by private U.S. financial institutions from \$2-\$25 million;
- A combination of these financing instruments.

In all cases the project must be commercially and financially sound; must be approved by the host country; and must be within the demonstrated competence of the proposed management and the U.S. investor, who have a proven record of success in the particular business and a significant financial risk in the enterprise.

OPIC encourages joint ventures between foreign citizens and U.S. firms. However, in projects involving OPIC financing, U.S. investors must own at least 25% of the voting shares or equivalent risk-taking interest, and the U.S. sponsor is expected to have a continuing management role. (There is no minimum U.S. equity participation required in connection with OPIC insurance protection.)

1.4.5 Special Assistance for Small Business

The 1978 amendments to OPIC's charter call for preferential measures to encourage investment by U.S. small- and medium-sized companies interested in the growing markets of developing nations.

Consistent with this mandate, OPIC provides several specific services to smaller U.S. companies, defined as those not ranked in the "Fortune 1000," not available to larger companies. These services include a reduced insurance registration fee, OPIC payment for the services of licensed insurance brokers to smaller companies in obtaining OPIC insurance, grants for certain project reconnaissance travel, expanded funding of up to 75% of agreed costs of feasibility studies, assumption by OPIC of certain legal or consultant's fees incurred in establishing or operating a project, assistance in setting up financial controls, and support of private U.S. voluntary organizations and cooperatives in developing small-scale private enterprises.

SECTION 2.0

WHERE TO EXPORT?

An area's incident solar radiation will indicate the technical or economic practicality of a solar system. Several hundred stations in over 70 countries have been referenced to provide solar radiation values.

If the population, GNP per capita, or energy consumption per capita are small, marketing strategies should correspond. For example, small populations may be targets for a marketing effort but not a distribution point. Small GNP per capita may indicate the best market is via government or subsidized programs, while small energy consumption per capita may dictate the sale of simple versus high technology systems. This handbook contains a set of economic and social statistics that orient marketing strategies toward the appropriate marketing of appropriate technology.

Information available on foreign solar and related trade associations indicates that many countries lack a solar industry. This fact can be interpreted either as a write-off or an opportunity. Wherever possible, commercial and solar associations that can provide more detailed trade and solar information have been included.

SERIO 

STATISTICAL PROFILE: NORTH AMERICA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
Canada	23.3	7,485	English/ French	76/24	95	Canadian Dollar	6.0	2.3	174.1	7,573	7.459	6.268	276.4	37.12	87.3	38,099	33,096
Mexico	64.6	1,010	Spanish	64/36	82	Peso	80	31	67.6	1,085	2.346	2.04	33.93	255.2	64.5	33,529	9,847
U.S.A.	216.8	7,686	English	74/26	99	Dollar	58	23	1,698.0	7,686	56.599	65.29	305.77	15.3	191.	—	—

INSOLATION: NORTH AMERICA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Canada												
Edmonton	89	176	312	413	509	513	526	409	298	188	111	66
Montreal	110	200	320	400	470	490	510	440	310	200	100	80
Toronto	121	185	292	372	478	520	527	434	344	224	123	95
Winnipeg	131	225	363	439	510	525	568	472	319	205	119	92
Mexico												
Chihuahua	178	353	297	300	380	376	325	424	416	318	286	170
Veracruz	325	435	—	—	597	619	502	560	528	505	427	408

^aInsolation: langley per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: CANADA

Population (millions):	23.3	GNP (US\$ billions):	174.1
Per capita income (US\$):	7,485	GNP per capita (US\$):	7,573
Primary language:	English/French	Energy production (quad Btu) ^a :	7.459
Urban/rural:	76/24	Gross energy consumption ^a	
Literacy rate (%):	95	(quad Btu):	6,268
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b	
Population density		Energy Reserves:	276.4
per sq. mile:	6.0	Oil ^c :	37.12
per sq. kilometer:	2.3	Gas ^c :	87.3
		Trade with U.S.	
		From U.S. Imports:	33,096
		To U.S. Exports:	38,099

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Edmonton:												
Lat.: 53° 34' N												
Long.: 113° 31' W												
Insolation	89	176	312	413	509	513	526	409	298	188	111	66
Temperature	-14.1	-11.6	-5.5	4.2	11.2	14.3	17.3	15.6	10.8	5.1	-4.2	-10.4
Montreal:												
Lat.: 45° 30' N												
Long.: 73° 37' W												
Insolation	110	200	320	400	470	490	510	440	310	200	100	80
Temperature	-8.7	-7.8	-2.1	6.2	13.6	18.9	21.6	20.5	15.6	9.4	2.3	-5.9
Toronto:												
Lat.: 43° 40' N												
Long.: 79° 24' W												
Insolation	121	185	292	372	478	520	527	434	344	224	123	95
Temperature	-3.9	-3.8	0.2	7.0	13.2	19.0	21.9	21.1	16.6	10.6	4.3	-1.8
Winnipeg:												
Lat.: 49° 54' N												
Long.: 97° 14' W												
Insolation	131	225	363	439	510	525	568	472	319	205	119	92
Temperature	-17.7	-15.5	-7.9	3.3	11.3	16.5	20.2	18.9	12.8	6.2	-4.8	-12.9

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

STATISTICAL PROFILE: CANADA (Concluded)

Embassies:

Canada: 1746 Massachusetts Ave., NW
Washington, D.C. 20036
U.S.: 100 Wellington St.
Ottawa,
Canada K1P 5T1
Tel: (613) 238-5335
Telex: 0533582

Trade Organizations (Contd.):

Other (government):
Energy and Natural Resources
9915-108 Street
Edmonton, Alberta T5K 2C9
Canada
(403) 427-7727

Chambers of Commerce:

The Canadian Chamber of Commerce, Inc.
1080 Beaver Hall Hill
Montreal, Quebec H2Z 1T2
Canada

Ministere des Richesses Naturelles
Direction generale de L'energie
200 Chemin Ste-Foy
Quebec, P.Q. G1R 4X7
Canada
(418) 643-3724

Trade and Solar Interest Organizations:

Solar Energy Society of Canada, Inc.
608-870 Cambridge Street
Winnipeg, Manitoba R3N 3H5
Canada

British Columbia Energy Commission
2010-1177 West Hastings Street
Vancouver, British Columbia V6E 2L7
Canada
L6047 89-1839

The Canadian Construction Association
Construction House
85 Albert Street
Ottawa, Ontario K1P 6A4
Canada

STATISTICAL PROFILE: MEXICO

Population (millions):	64.6	GNP (US\$ billions):	67.6
Per capita income (US\$):	1,010	GNP per capita (US\$):	1,085
Primary language:	Spanish	Energy production (quad Btu) ^a :	2.346
Urban/rural:	64/36	Gross energy consumption ^a	
Literacy rate:	82	(quad Btu):	2.04
Monetary unit:	Peso	Consumption per capita (MBtu) ^b :	33.93
Population density		Energy Reserves:	
per sq. mile:	80	Oil ^c :	255.2
per sq. kilometer:	31	Gas ^c :	64.5
		Trade with U.S.	
		From U.S. Imports:	9,847
		To U.S. Exports:	33,529

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Chihuahua:												
Lat.: 28° 38' N												
Long.: 106° 05' W												
Insolation	178	353	297	300	380	376	325	424	416	318	286	170
Temperature	—	—	—	—	—	—	—	—	—	—	—	—
Veracruz:												
Lat.: 19° 12' N												
Long.: 96° 08' W												
Insolation	325	435	—	—	597	619	502	560	528	505	427	408
Temperature	—	—	—	—	—	—	—	—	—	—	—	—

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Mexico: 2829 16th St., NW
 Washington, D.C. 20009
 U.S.: Paseo de la Reforma 305
 Mexico 5 City, Mexico
 Tel: (905) 553-3333
 Telex: 017-73-091
 017-75-685

Chambers of Commerce:
 Confederacion de Camaras Nacionales
 de Comercio (CONCANACO)
 Balderas 144, 2° 43° Pisos
 Apdo. 113
 Mexico I. D.F.

U.S. Trade Center:
 31 Liverpool
 Mexico 6, DF
 Tel: 591-01-55
 Dir: James L. Blow

STATISTICAL PROFILE: MEXICO (Concluded)**Trade and Solar Interest Organizations:**

Grupo del Sol, S.C.
Costa 209
Col. Las Aguilas
Mexico 20, D.F.
(solar energy group)

Asociacion Nacional de Importadores
y Exportadores de la Republica
Mexicana (ANIERM)
Paseo de la Reforma 122, 8°
Mexico 6, D.F.

STATISTICAL PROFILE: UNITED STATES OF AMERICA

Population (millions):	216.8	GNP (US\$ billions):	1,698.0
Per capita income (US\$):	7,686	GNP per capita (US\$):	7,686
Primary language:	English	Energy production (quad Btu) ^a :	56.599
Urban/rural (%):	74/26	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	65.29
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b	305.77
Population density		Energy Reserves:	
per sq. mile:	58	Oil ^c :	15.3
per sq. kilometer:	23	Gas ^c :	191
		Trade with U.S.	
		From U.S. Imports:	—
		To U.S. Exports:	—

Long-term monthly averages of incident solar radiation, temperature, degree-days, and global K_t for 248 U.S. locations are available in the Insolation Data Manual, SERI/SP-755-789. This manual can be purchased from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

SERIO 

STATISTICAL PROFILE: CENTRAL AMERICA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
El Salvador	4.3	503	Spanish	39/61	58	Colon	508	196	2.0	492	0.0019	0.0275	6.89	—	—	444	352
Guatemala	6.4	517	Spanish	36/64	46	Quetzal	149	57	4.1	651	0.00136	0.04	7.45	0.116	0.01	413	467
Honduras	2.5	392	Spanish/ English	31/69	50	Lempira	65	25	1.2	410	0.00136	0.0196	7.17	—	—	415	324
Nicaragua	2.3	891	Spanish/ English	49/51	57	Cordoba	44	17	1.8	788	0.00133	0.0287	13.31	—	—	234	100
Panama	1.8	1,108	Spanish	50/50	79	Balboa	59	23	2.3	1,315	0.000389	0.04	24.04	—	—	191	528

INSOLATION: CENTRAL AMERICA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
El Salvador San Salvador	498	544	561	549	528	449	530	597	454	506	510	504
Guatemala	—	—	—	—	—	—	—	—	—	—	—	—
Honduras	—	—	—	—	—	—	—	—	—	—	—	—
Nicaragua	—	—	—	—	—	—	—	—	—	—	—	—
Panama Albrook Air Force Base	392	476	525	496	404	336	370	372	448	388	380	420

^aInsolation = langley per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: EL SALVADOR

Population (millions):	4.3	GNP (US\$ billions):	2.0
Per capita income (US\$):	503	GNP per capita (US\$):	492
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.0019
Urban/rural (%):	39/61	Gross energy consumption ^a	
Literacy rate (%):	58	(quad Btu):	0.0275
Monetary unit:	Colon	Consumption per capita (MBtu) ^b	6.89
Population density		Energy Reserves:	
per sq. mile:	508	Oil ^c :	—
per sq. kilometer:	196	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	352
		To U.S. Exports:	444

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
San Salvador:												
Lat.: 13° 43' N												
Long.: 89° 12' W												
Insolation	498	544	561	549	528	449	530	597	454	506	510	504
Temperature	22.1	22.4	23.5	24.2	23.7	23.1	22.9	23.0	22.5	22.4	22.0	22.0

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 El Salvador: 2308 California St., NW
 Washington, D.C. 20008
 U.S.: 1230, 25 Avenida Norte
 San Salvador, El Salvador
 Tel: 25-7100

Chambers of Commerce:
 Camara de Comercio e Industria de El
 Salvador
 9a Avda. Notre y 5a Calle Pte
 San Salvador, El Salvador

STATISTICAL PROFILE: GUATEMALA

Population (millions):	645	GNP (US\$ billions):	4.1
Per capita income (US\$):	517	GNP per capita (US\$):	
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.00136
Urban/rural (%):	36/64	Gross energy consumption ^a	
Literacy rate (%):	46	(quad Btu):	0.04
Monetary unit:	Quetzal	Consumption per capita (MBtu) ^b :	7.45
Population density		Energy Reserves:	
per sq. mile:	149	Oil ^c :	0.116
per sq. kilometer:	57	Gas ^c :	0.01
		Trade with U.S.	
		From U.S. Imports:	467
		To U.S. Exports:	413

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Guatemala City:												
Lat.: 15° 29' N												
Long.: 90° 16' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	16.3	17.0	18.4	19.5	19.6	18.7	18.5	18.7	18.3	17.7	16.7	16.3

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Guatemala: 2220 R St., NW
 Washington, D.C. 20008
 U.S.: 7-01 Avenida de la Reforma
 Zone 10
 Guatemala City, Guatemala
 Tel: 31-15-41

Chambers of Commerce:

Camara de Comercio de Guatemala
 10A Calle 3-80
 Zona I, Guatemala City
 Chamber of Commerce

 Camara de Industria de Guatemala
 Ruta 6, 9-21
 Zona 4, Guatemala City

 Camara Guatemalteca de la Construcción
 13 Calle 9-31
 Edif. Prensa Libre 7⁰
 Zona 1, Guatemala City
 Apdo. 2083

STATISTICAL PROFILE: HONDURAS

Population (millions):	2.5	GNP (US\$ billions):	1.2
Per capita income (US\$):	392	GNP per capita (US\$):	410
Primary language:	Spanish/English	Energy production (quad Btu) ^a :	0.00136
Urban/rural (%):	31/69	Gross energy consumption ^a	
Literacy rate (%):	50	(quad Btu):	0.0196
Monetary unit:	Lempira	Consumption per capita (MBtu) ^b	7.17
Population density		Energy Reserves:	
per sq. mile:	65	Oil ^c :	—
per sq. kilometer:	25	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	324
		To U.S. Exports:	415

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Tegucigalpa:												
Lat.: 15° 29' N												
Long.: 90° 16' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	19.3	20.5	21.9	23.3	23.61	23.1	22.5	22.8	22.9	22.1	20.7	19.6

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Honduras: 4301 Connecticut Ave., NW
 Washington, D.C. 20008
 U.S.: Avenida La Paz
 Tegucigalpa, Honduras
 Tel: 22-3121/22/23/24/27

Chambers of Commerce:

Camara de Comercio e Industrias de
 Tegucigalpa
 Edif. Barjum, 3°
 5A Calle, No. 408
 Tegucigalpa, Honduras

Camara Hondurena de la Industria de
 Construccion
 Edificio Williams-Torres, 2°
 Apdo. 14
 San Pedro Sula, Honduras

STATISTICAL PROFILE: NICARAGUA

Population (millions):	2.3	GNP (US\$ billions):	1.8
Per capita income (US\$):	891	GNP per capita (US\$):	788
Primary language:	Spanish/English	Energy production (quad Btu) ^a :	0.00133
Urban/rural (%):	49/51	Gross energy consumption ^a	
Literacy rate (%):	57	(quad Btu):	0.0287
Monetary unit:	Cordoba	Consumption per capita (MBtu) ^b	13.31
Population density		Energy Reserves:	
per sq. mile:	44	Oil ^c :	—
per sq. kilometer:	17	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	100
		To U.S. Exports:	234

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Managua:												
Lat.: 12° 08' N												
Long.: 86° 11' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	2.3	27.2	28.6	29.3	29.4	27.2	26.9	27.2	26.9	26.5	26.3	26.1

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads

Embassies:
 Nicaragua: 1627 New Hampshire Ave., NW
 Washington, D.C. 20009
 U.S.: Km. 4-1/2 Carretera Sur.
 Managua, Nicaragua
 Tel: 23061-8, 23881-7

Chambers of Commerce:
 Camara Nacional de Comercio de Managua
 Apdo. 135
 Managua, Nicaragua

 Camara de Industrias de Nicaragua
 (Cadin)
 Apdo. 1436
 Managua, Nicaragua

 Camara Nicaraguense de la Construccion
 Apdo. 3016
 Managua, Nicaragua

STATISTICAL PROFILE: PANAMA

Population (millions):	1.8	GNP (US\$ billions):	2.3
Per capita income (US\$):	1,108	GNP per capita (US\$):	1,315
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.000389
Urban/rural (%):	50/50	Gross energy consumption ^a	
Literacy rate (%):	79	(quad Btu):	0.04
Monetary unit:	Balboa	Consumption per capita (M/Btu) ^b	24.04
Population density		Energy Reserves:	
per sq. mile:	59	Oil ^c :	—
per sq. kilometer:	23	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	528
		To U.S. Exports:	191

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Albrook Air Force Base:												
Lat.: 08° 39' N												
Long.: 79° 34' W												
Insolation	392	476	525	496	404	336	370	372	448	388	380	420
Temperature	—	—	—	—	—	—	—	—	—	—	—	—

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Panama: 2862 McGill Terrace, NW
 Washington, D.C. 20008
 U.S.: Avenida Balboa Y Calle 38
 Apartado 6959, R.P. 5
 Panama, Panama
 Tel: 25-3600

Chambers of Commerce:
 Camara de Comercio, Industrias y
 Agricultura de Panama
 Apdo. 74
 Panama I
 Camara Panamena de la Construccion
 Apdo. 6793
 Panama 5

SERIO 



STATISTICAL PROFILE: SOUTH AMERICA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
Argentina	26.1	1,854	Spanish	72/28	93	Peso	24	9.3	39.9	1,550	1.155	1.237	48.74	14.2506	22	587	1,890
Brazil	112.2	1,384	Portuguese	61/39	68	Cruzeiros	33	13	125.6	1,150	0.706	1.995	18.62	7.54	1.5	3,119	3,442
Chile	10.7	681	Spanish	79/21	90	Peso	36	14	11.0	1,050	0.131	0.2179	21.26	2.32	2.5	440	886
Colombia	25.0	508	Spanish	64/36	78	Peso	51	20	15.4	683	0.531	0.439	19.93	4.64	6.0	1,209	1,409
Ecuador	7.6	741	Spanish	42/58	75	Sucre	63	24	4.7	681	0.336	0.0826	12.28	6.38	4.0	816	696
Guyana	0.83	506	English	40/60	85	Dollar	9.4	3.6	9.43	549	—	0.0245	31.88	NA	NA	66	74
Peru	16.4	542	Spanish	63/37	72	Sol	32	13	12.6	504	0.188	0.296	18.65	3.77	1.1	1,181	720
Uruguay	2.8	1,237	Spanish	83/17	91	New Peso	41	16	3.9	1,393	0.00386	0.08	28.82	—	—	91	127
Venezuela	12.7	2,622	Spanish	75/25	82	Boliver	35	14	31.8	2,569	5.588	0.879	73.34	104.11	42.0	5,166	3,931

INSOLATION: SOUTH AMERICA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Argentina												
Buenos Aires	690	556	434	324	235	182	203	278	379	482	564	643
Corrientes	600	550	470	370	290	250	260	330	420	500	580	590
Trelew	692	542	404	250	134	87	98	198	336	424	534	543
Tucuman	371	541	434	322	237	202	274	333	425	489	540	524
Brazil												
Belem	450	410	410	430	470	510	540	570	590	600	575	558
Belo Horizonte	500	490	450	410	370	350	370	420	440	460	480	450
Campinas	560	530	480	420	360	320	340	390	440	510	550	550
Recife	540	540	510	470	430	400	410	460	510	540	550	540
Chile												
Santiago	680	660	510	370	220	170	190	250	330	520	580	700
Colombia												
Bogota	453	445	418	375	377	393	407	413	415	386	336	401
Ecuador												
Portoviejo	280	297	330	345	304	253	276	304	329	305	283	290
Izobamba	364	354	349	322	353	348	362	383	385	358	359	362
Guyana												
Georgetown	390	430	440	450	410	400	440	470	490	460	420	370
Peru												
Huancayo	670	518	574	540	499	491	519	468	597	634	629	596
Uruguay												
Montevideo	670	610	490	360	260	200	210	280	390	500	620	670
Venezuela												
Caracas	446	526	534	515	427	442	427	499	496	437	409	421
Maracaibo	434	456	445	481	418	450	480	512	604	449	444	460
San Fernando	424	464	470	410	344	334	364	376	399	407	414	413

^aInsolation: langleys per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: ARGENTINA

Population (millions):	26.1	GNP (US\$ billions):	39.9
Per capita income (US\$):	1,854	GNP per capita (US\$):	1,550
Primary language:	Spanish	Energy production (quad Btu) ^a :	1.155
Urban/rural (%):	72/28	Gross energy consumption ^a	
Literacy rate (%):	93	(quad Btu):	1.237
Monetary unit:	Peso	Consumption per capita (MBtu) ^b :	48.74
Population density		Energy Reserves:	
per sq. mile:	24	Oil ^c :	14.25
per sq. kilometer:	9.3	Gas ^c :	22
		Trade with U.S.	
		From U.S. Imports:	1,890
		To U.S. Exports:	587

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Buenos Aires:												
Lat.: 34° 35' S												
Long.: 58° 29' W												
Insolation	640	556	434	324	235	182	203	278	379	482	564	643
Temperature	23.7	23.0	20.7	16.6	13.7	11.1	10.5	11.5	13.6	16.5	19.5	22.1
Corrientes:												
Lat.: 27° 28' S												
Long.: 58° 49' W												
Insolation	600	550	470	370	290	250	260	330	420	500	580	590
Temperature	27.4	26.7	24.9	20.9	18.6	16.0	15.7	17.1	19.2	21.5	24.0	26.5
Trelew:												
Lat.: 43° 14' N												
Long.: 65° 18' W												
Insolation	692	542	404	250	134	87	98	198	336	424	534	543
Temperature	20.6	20.0	17.3	13.2	9.6	6.1	6.0	7.6	10.2	14.0	17.3	19.3
Tucuman:												
Lat.: 26° 48' N												
Long.: 65° 12' W												
Insolation	371	541	434	322	237	202	274	333	425	489	540	524
Temperature	24.5	23.7	22.0	18.3	15.4	12.3	12.6	14.0	17.1	20.2	22.5	24.6

quad = quadrillion (10^{15}).

Insolation: langley (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

STATISTICAL PROFILE: ARGENTINA (Concluded)Embassies:

Argentina: 1600 New Hampshire Ave. NW
Washington, D.C. 20009
Tel: (202) 387-0705
U.S.: 4300 Columbia, 1425
Buenos Aires, Argentina
Tel: 774-7611

Chambers of Commerce:

International Chamber of Commerce
c/o Camara Argentina De Comercio
Avda. Leandro N. Alem 36
Buenos Aires, Argentina

Camara de Comercio Exterior de la
Federacion del Comercio Industria
Avda. Cordoba 1868
Rosario, Sante Fe, Argentina
(deals with export and import)

Trade and Solar Interest Organizations:

Asociacion Argentina de Energia Solar
(ASADES)
Casilla Correo N° 13
1602 Puenta Saavedra
Prov. de Buenos Aires, Argentina

Asociacion de Importadores y
Exportadores de la Republica
Argentina
Avda. de Mayo 981
Buenos Aires, Argentina
(importers and exporters)

Development Organizations:

Agua Y Electrica
Buenos Aires, Argentina
(state electric and water board)

Observatorio Nacional de Fisica
Cosmica
Comision Nacional de Estudios
Geoheliofisicos
Programa de Helioenergetica
Avenida Mitre
San Miguel, Prov. Buenos Aires

Development Organizations (Contd.):

Universidad Nacional de Salta
Departamento de Ciencias
Buenos Aires 177, Salta

Universidad Nacional de San Luis
Departamento de Fisica y Quimica
Chabuco y Pedernara
San Luis

Universidad de la Pampa
Institutos de Estudios Regionales
Mansilla 178
Santa Rosam La Pampa

Universidad Nacional de Rosario
Facultad de Ciencias exactas
Departamento de fisica
Grupo de Energia Solar
Avenida Pellegrini 250
2000 Rosario

CIFOBI
Facultad de Bioquimica
Suipadia 570
2000 Rosario

Comision Nacional de Energia atomica
Departamento de fisica
Grupo de Energia Solar
Avenida del Libertador 8250
1429 Buenos Aires

Ingeniera Tomeco SRL
Fabrica
Avenida San Martin 5790
Lujan MZA
Anzorena 272
Godoy Cruz MZA
5501 Argentina

Termosol SMAR
Avenida Mitre 5354
1678 Caseros
Prov. Buenos Aires

STATISTICAL PROFILE: BRAZIL

Population (millions):	112.2	GNP (US\$ billions):	125.6
Per capita income (US\$):	1,384	GNP per capita (US\$):	1,150
Primary language:	Portuguese	Energy production (quad Btu) ^a :	0.706
Urban/rural (%):	61/39	Gross energy consumption ^a	(quad Btu): 1.995
Literacy rate (%):	68	Consumption per capita (MBtu) ^b :	18.62
Monetary unit:	Cruzeiros	Energy Reserves:	
Population density		Oil ^c :	7.54
per sq. mile:	33	Gas ^c :	1.5
per sq. kilometer:	13	Trade with U.S.	
		From U.S. Imports:	3,442
		To U.S. Exports:	3,119

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Belem:												
Lat.: 01° 28' S												
Long.: 48° 29' W												
Insolation	450	410	410	430	470	510	540	570	590	600	570	550
Temperature	25.2	25.0	25.1	25.5	25.8	25.8	25.8	25.9	25.8	26.1	26.3	25.9
Belo Horizonte:												
Lat.: 19° 56' S												
Long.: 43° 57' W												
Insolation	500	490	450	410	370	350	370	420	440	460	480	450
Temperature	22.5	22.8	22.4	21.3	19.2	17.7	17.2	18.9	20.5	21.4	21.7	21.9
Campinas:												
Lat.: 22° 53' S												
Long.: 47° 05' W												
Insolation	560	530	480	420	360	320	340	390	440	510	550	550
Temperature	22.4	22.3	21.9	20.0	17.5	16.1	16.2	17.0	18.8	20.1	21.9	22.1
Recife:												
Lat.: 08° 01' S												
Long.: 34° 51' W												
Insolation	540	540	510	470	430	400	410	460	510	540	550	540
Temperature	27.1	27.1	27.0	26.6	25.9	25.0	24.3	24.4	25.3	26.2	26.6	26.9

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

STATISTICAL PROFILE: BRAZIL (Concluded)

Embassies:

Brazil: 3006 Massachusetts Ave., NW
Washington, D.C. 20008
Joao Baptista Pinheiro
U.S.: Lote No. 3, Avenida das Nacoes
Brasillia, Brazil
Tel: (0612) 223-0120
Telex: 061-1091

U.S. Trade Center: Avenida Paulista 2439
Sao Paulo
Tel: (11) 853-2011
Telex: 391-1125274

Chambers of Commerce:

Conferacao das Associacoes Comerciais do
Brazil
Brasillia, Brazil

Development Organizations:

Conselho de Desenvolvimento Industrial
(CDI)
Proca Maua 7
Rio de Janeiro, Brazil
(Attached to the Ministry of Industry and
Commerce, offers incentives for private
investment and exemption from import
duties on machinery and equipment not
available in Brazil.)

Universidad Federal de Paraiba
Laboratorio de Energia solar
Joao Pessoa
58000 Paraiba

Universidad Estatal de Campinas
UNICAMP
Grupo de Energia
Instituto de Fisica
Caixa postal 1170
13100 Campinas SP

Instituto Tecnologico de Aeronautica
Div. de ingenieria mecanica
12200 San Jose dos Campos

Centro de Pesquisas del Cacao
Div. de ingenieria agricola
Caixa postal 7
Italbana BA

Development Organizations (Contd.):

CETEC Fundacion Centro Tecnologico de
Minas gerais
Avenida Jose Candido da Silveira 2000
Caixa postal 2306
CEP 3000
Belo Horizonte, MG

Universidad de Sao Paulo
Instituto da Fisica
CA Caixa postal 20516, 8219
Sao Paulo

Instituto de Pesquisas da Marinha
Ministerio da Marinha
Rio de Janeiro

FINEP financiadora de estudios y proyectos
Grupo de energia
Ministerio do Planjamiento
Avenida Rio Branco 124
2º/12º Andar
Rio de Janeiro

Centro de Tecnologia Promon
Praia de Flamengo 154
20000 Rio de Janeiro

Electrobras
Centrais electricas brasileiras Sa.,
R. Visconde de Inhauma 134
15 andar
Sep 20094
Rio de Janeiro RJ

FAT
Fabrica de aparelhos electro-termicos SA
rua Barao de Petropolis 347
Rio de Janeiro

SANOR Ind. e Com. Sao Norberto Ltda.
rua Alagoas 746
Sao Paulo

Gea Term Ind. e Com. Ltda.
rua Brigadeiro Galvoa Peixoto 195
Sao Paulo

Luwa Climatecnica SA
rua Verbo Divino 1207
Sao Paulo

STATISTICAL PROFILE: CHILE

Population (millions):	10.7	GNP (US\$ billions):	11.0
Per capita income (US\$):	681	GNP per capita (US\$):	1,050
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.131
Urban/rural (%):	79/21	Gross energy consumption ^a	
Literacy rate (%):	90	(quad Btu):	0.2179
Monetary unit:	Peso	Consumption per capita (MBtu) ^b	2,126
Population density		Energy Reserves:	
per sq. mile:	36	Oil ^c :	2.32
per sq. kilometer:	14	Gas ^c :	2.5
		Trade with U.S.	
		From U.S. Imports:	886
		To U.S. Exports:	440

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Santiago:												
Lat.: 33° 27' S												
Long.: 70° 42' W												
Insolation	680	660	510	370	220	170	190	250	330	520	580	700
Temperature	20.0	19.3	17.2	13.9	10.9	8.4	8.1	9.1	11.6	13.8	16.5	18.9

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Chile: 1732 Massachusetts Ave., NW
 Washington, D.C. 20036
 U.S.: Codina Bldg.
 1343 Augustinas
 Santiago, Chile
 Tel: 710133/90
 710326/75
 Telex: 40062-ICA-CL

Chambers of Commerce:

Camara de Comercio de Santiago de
 Chile
 Santa Lucia 302, 3°
 Casilla 1297
 Santiago, Chile

Development Organizations:

Comision Nacional de Energia
 Santiago, Chile
 (To determine Chile's energy policy and
 improve investment in energy related
 products.)

STATISTICAL PROFILE: COLOMBIA

Population (millions):	25.0	GNP (US\$ billions):	15.4
Per capita income (US\$):	508	GNP per capita (US\$):	683
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.531
Urban/rural (%):	64/36	Gross energy consumption ^a	
Literacy rate (%):	78	(quad Btu):	0.439
Monetary unit:	Peso	Consumption per capita (MBtu) ^b	19.93
Population density		Energy Reserves:	
per sq. mile:	51	Oil ^c :	4.64
per sq. kilometer:	20	Gas ^c :	6.0
		Trade with U.S.	
		From U.S. Imports:	1,409
		To U.S. Exports:	1,209

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Bobota:												
Lat.: 04° 38' N												
Long.: 74° 05' W												
Insolation	453	445	418	375	377	393	407	413	415	386	356	401
Temperature	12.8	13.2	13.7	13.7	13.7	13.2	12.9	12.9	12.8	12.9	13.1	13.1

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversation of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Colombia: 2118 Leroy Place, NW
 Washington, D.C. 20008
 U.S.: Calle 37, 8-40
 Bogota, Colombia
 Tel: 285-1300
 Telex: 44843

Chambers of Commerce (Cont.):

Consejo Interamericano de Comercio y
 Produccion
 Apdo. Aero 3012
 Bogota, Colombia
 (Interamerican Council of Commerce and
 Production)

Chambers of Commerce:

Confederacion Colombiana de
 Camarades
 Carrera 9, No. 16-21, 10°
 Apdo. Aero 19750
 Bogota, Colombia

Trade Organizations:

Consejo Nacional de Energia
 Bogota, Colombia

STATISTICAL PROFILE: COLOMBIA (Concluded)Trade Fairs:

Corporacion de Ferias y Exposiciones S.A.
Carrera 40, No. 22-C-67
Apdo. Aero 6843
Bogota, Colombia

STATISTICAL PROFILE: ECUADOR

Population (millions):	7.6	GNP (US\$ billions):	4.7
Per capita income (US\$):	741	GNP per capita (US\$):	681
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.336
Urban/rural (%):	42/58	Gross energy consumption ^a	
Literacy rate (%):	75	(quad Btu):	0.0826
Monetary unit:	Sucre	Consumption per capita (MBtu) ^a	12.28
Population density		Energy Reserves:	
per sq. mile:	63	Oil ^c :	6.38
per sq. kilometer:	24	Gas ^c :	4.0
		Trade with U.S. ^b	
		From U.S. Imports:	696
		To U.S. Exports:	816

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Portoviejo:												
Lat.: 01° 04' S												
Long.: 80° 26' W												
Insolation	280	297	330	345	304	253	276	304	329	305	283	290
Temperature	26.5	26.5	27.0	27.0	26.0	25.0	25.0	24.5	25.5	25.5	25.5	26.0
Izobamba:												
Lat.: 00° 22' S												
Long.: 78° 34' W												
Insolation	364	354	349	322	353	348	362	383	385	358	359	362
Temperature	12.0	12.0	11.5	11.5	12.0	12.5	12.5	11.5	12.0	11.5	11.5	12.0

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Ecuador: 2535 15th St., NW
 Washington, D.C. 20009
 U.S.: 120 Avenida Patria
 Quito, Ecuador
 Tel: 548-000

Development Organizations:
 Instituto Ecuatoriano de Electrificación
 (Inecel)
 (Oversees the generation, transmission,
 and development of electric power.)

Chambers of Commerce:
 Federacion Nacional de Camaras de
 Comercio del Ecuador
 Olmedo 414
 Casilla 1304
 Guayaquil, Ecuador

STATISTICAL PROFILE: GUYANA

Population (millions):	0.83	GNP (US\$ billions):	0.43
Per capita income (US\$):	506	GNP per capita (US\$):	549
Primary language:	English	Energy production (quad Btu) ^a :	—
Urban/rural (%):	40/60	Gross energy consumption ^a	
Literacy rate (%):	85	(quad Btu):	0.0245
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b	31.88
Population density		Energy Reserves:	
per sq. mile:	9.4	Oil ^c :	NA
per sq. kilometer:	3.6	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	74
		To U.S. Exports:	66

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Georgetown:												
Lat.: 07° 45' N												
Long.: 58° 04' W												
Insolation	390	430	440	450	410	400	440	470	490	460	420	370
Temperature	26.3	26.4	26.8	27.1	27.0	26.7	26.7	27.2	27.7	27.7	27.4	26.7

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Guyana: 2490 Tracy Place, NW
 Washington, D.C. 20008
 U.S.: 31 Main Street
 Georgetown, Guyana
 Tel: 62687 Ext. 26

Chambers of Commerce:
 Georgetown Chamber of Commerce
 POB 10
 Georgetown, Guyana

STATISTICAL PROFILE: PERU

Population (millions):	16.4	GNP (US\$ billions):	12.6
Per capita income (US\$):	542	GNP per capita (US\$):	784
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.188
Urban/rural (%):	63/37	Gross energy consumption ^a	
Literacy rate (%):	72	(quad Btu):	0.296
Monetary unit:	Sol	Consumption per capita (M/Btu) ^b	18.65
Population density		Energy Reserves:	
per sq. mile:	32	Oil ^c :	3.77
per sq. kilometer:	13	Gas ^c :	1.1
		Trade with U.S.	
		From U.S. Imports:	720
		To U.S. Exports:	1,181

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Huancayo:												
Lat.: 12° 07'												
Long.: 75° 20'												
Insolation	670	518	574	540	499	491	519	568	597	634	629	596
Temperature	12.5	12.5	12.0	12.0	11.0	9.5	9.5	11.0	12.5	13.0	13.0	12.5

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Peru: 1700 Massachusetts Ave., NW
 Washington, D.C. 20036
 U.S.: Corner Avenidas Inca Garilaso de
 la Vega & Expana
 Lima, Peru
 Tel: 286000

Chambers of Commerce:
 Federacion Nacional de Camaras de
 Comercio del Peru (FEDECAM)
 Avda. Gregorio Escobedo 398
 Lima II

STATISTICAL PROFILE: URUGUAY

Population (millions):	2.8	GNP (US\$ billions):	3.9
Per capita income (US\$):	1,237	GNP per capita (US\$):	1,393
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.00386
Urban/rural (%):	83/17	Gross energy consumption ^a	
Literacy rate (%):	91	(quad Btu):	0.08
Monetary unit:	New Peso	Consumption per capita (M/Btu) ^b	28.82
Population density		Energy Reserves:	
per sq. mile:	41	Oil ^c :	—
per sq. kilometer:	16	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	127
		To U.S. Exports:	91

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Montevideo:												
Lat.: 34° 52' S												
Long.: 56° 12' W												
Insolation	670	610	490	360	260	200	210	280	390	500	620	630
Temperature	22.5	22.2	20.3	17.0	13.7	10.9	10.5	11.1	12.8	15.1	18.3	21.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Uruguay: 1918 F St., NW
Washington, D.C. 20006

U.S.: Calle Lauro Muller 1776
Montevideo, Uruguay

Chambers of Commerce:

Camara Nacional de Comercio
Edificio de la Bolsa de Comercio
Misiones 1400, Uruguay

Trade and Solar Interest Organizations:

Consejo Interamericano de Comercio y
Produccion
Edificio de la Bolsa Comercio
Misiones 1400, Uruguay
(Interamerican Council of Commerce
and Production)

STATISTICAL PROFILE: VENEZUELA

Population (millions):	12.7	GNP (US\$ billions):	31.8
Per capita income (US\$):	2,622	GNP per capita (US\$):	2,569
Primary language:	Spanish	Energy production (quad Btu) ^a :	5.588
Urban/rural (%):	75/25	Gross energy consumption ^a	
Literacy rate (%):	82	(quad Btu):	0.879
Monetary unit:	Bolivar	Consumption per capita (M/Btu) ^a	73.34
Population density		Energy Reserves:	
per sq. mile:	35	Oil ^c :	104.1
per sq. kilometer:	14	Gas ^c :	42.0
		Trade with U.S. ^b	
		From U.S. Imports:	3,931
		To U.S. Exports:	5,166

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Caracas:												
Lat.: 10° 30'												
Long.: 66° 55'												
Insolation	446	526	534	515	427	442	472	499	496	437	409	421
Temperature	19.2	19.7	20.7	21.7	22.0	21.5	21.1	2.16	21.8	21.5	20.8	19.2
Maracaibo:												
Lat.: 10° 41' N												
Long.: 71° 39' W												
Insolation	434	456	445	481	418	450	480	512	604	449	444	460
Temperature	26.8	26.9	27.2	27.8	28.4	28.6	28.6	28.8	28.7	28.1	27.9	27.2
San Fernando:												
Lat.: 07° 53'												
Long.: 67° 26'												
Insolation	424	464	470	410	344	334	364	476	399	407	414	415
Temperature	26.7	27.6	28.8	29.0	27.9	25.9	25.5	26.2	27.0	27.2	27.2	26.7

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

STATISTICAL PROFILE: VENEZUELA (Concluded)Embassies:

Venezuela: 2445 Massachusetts Ave., NW
Washington, D.C. 20008
U.S.: Avenida Francisco de
Miranda and Avenida
Principal de la Floresta
Caracas, Venezuela

Chambers of Commerce:

Edificio Fedecamaras, 5° Piso
Avda. El Empalme
Urb. El Bosque
Apdo. 2568 Venezuela

Federacion Venezolana de Camaras y
Asociaciones de Comercio y Produccion
(FEDE CAMARAS)

SERIO 

STATISTICAL PROFILE: EUROPE

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density (sq m) (sq k)		GNP (US\$ billion)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							Oil	Gas						Export	Import		
Austria	7.5	5,576	German	52/48	99	Schilling	232	90	40.1	5,334	0.303	0.774	102.82	0.754	0.365	380	312
Belgium	9.8	7,449	Flemish	95/5	98	Franc	839	324	66.7	6,741	0.234	1.52	155.18	—	—	1,741	5,186
Finland	4.7	5,660	Finnish	59/41	99	Markka	36	14	26.6	5,621	0.0423	0.623	132.45	—	—	449	337
France	53.1	6,380	French	70/30	99	Franc	249	96	346.7	6,549	1.317	5.805	110.47	0.232	6.0	4,771	5,587
West Germany	61.4	7,465	German	NA	99	Mark	641	247	457.5	7,438	4.609	9.184	148.54	2.61	6.0	10,955	8,482
Greece	9.3	2,701	Greek	65/35	84	Drachma	180	69	23.6	2,575	0.171	0.525	58.05	0.87	4.0	183	812
Iceland	0.2	7,401	Icelandic	87/13	99	Kronur	5.5	2.1	1.4	6,273	0.00761	0.0285	131.17	NA	NA	225	48
Ireland	3.2	2,711	English	52/48	99	Pound	117	45	8.1	2,559	0.0648	0.269	86.07	—	0.95	323	695
Italy	56.4	2,723	Italian	NA	94	Lira	483	187	171.3	3,048	0.751	4.671	83.7	3.712	3.5	4,918	4,359
Nether- lands	13.8	6,989	Dutch	77/23	98	Guilder	866	335	85.3	6,196	3.106	2.194	160.71	1.653	62.0	1,852	6,907
Norway	4.0	7,253	Norwegian	45/55	99	Kroner	32	12	29.9	7,432	0.654	0.5129	128.0	31.9	42.7	1,266	688
Portugal	8.7	1,498	Portuguese	NA	65	Escudo	273	105	16.5	1,700	0.0281	0.239	24.84	—	—	244	691
Spain	36.7	2,896	Spanish	NA	92	Pesata	184	71	104.1	2,904	0.566	2.117	59.86	2.03	3.5	1,304	2,507
Sweden	8.3	8,369	Swedish	83/17	99	Kronor	47	18	71.3	8,671	0.238	1.407	171.38	—	—	1,652	1,513
Switzer- land	6.3	8,918	German/ French	55/45	99	Franc	398	154	56.9	8,966	0.138	0.6504	101.6	—	—	2,076	3,660
United Kingdom	55.9	3,898	English	70/30	98	Pound	594	229	225.2	4,026	5.113	8.207	146.65	85.84	24.8	8,029	10,635

INSOLATION: EUROPE^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Austria												
Salzburg	96	160	250	319	414	383	380	229	283	192	76	66
Vienna	69	131	221	331	432	456	453	389	276	159	78	51
Belgium												
Brussels	58	106	185	288	382	397	383	329	242	142	69	41
Finland												
Helsinki	23	83	223	345	431	506	482	363	220	94	26	9
Sodankya	5	44	155	310	381	453	444	291	143	57	10	1
France												
Marseille	140	220	320	430	480	500	620	510	400	250	170	120
Nantes	100	160	250	380	460	490	510	420	290	200	110	80
Paris	75	131	248	337	421	481	456	382	291	170	85	62
West Germany												
Hamburg	51	102	197	318	412	432	402	338	255	137	55	33
Karlsruhe	68	148	240	342	502	518	525	370	302	202	69	52
Greece												
Athens	180	276	334	407	516	577	572	498	396	276	197	161
Iceland												
Reykjavik	12	56	138	264	396	366	406	298	165	66	18	5
Ireland												
Valentia	75	118	209	352	454	472	383	348	245	140	77	53
Italy												
Messina	151	222	315	395	512	570	504	515	387	266	167	136
Milan	62	133	220	366	493	499	515	430	325	188	84	47
Rome	147	266	257	372	482	546	559	483	363	262	153	118
Netherlands												
De Bilt	62	100	210	309	419	455	411	329	252	133	62	39

^aInsolation: langleys per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

INSOLATION: EUROPE^a (Concluded)

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Norway												
Bergen	22	57	200	248	419	416	336	276	151	64	27	10
Tromso	1	27	110	266	341	380	362	249	135	44	5	0
Portugal												
Lisbon	195	296	366	540	626	691	720	626	482	354	241	173
Spain												
Almeria	215	296	403	503	552	588	595	541	443	337	241	190
Madrid	157	256	331	474	531	575	606	537	403	284	187	141
Sweden												
Stockholm	28	83	202	298	434	488	465	356	226	100	32	17
Switzerland												
Zurich	77	135	251	360	407	515	493	411	304	152	88	62
United Kingdom												
Cambridge	60	102	190	284	398	428	412	320	246	151	67	42
Lerwick Obser- vatory	27	74	152	260	358	421	321	246	196	89	36	15
London	48	90	170	287	372	410	376	317	234	130	63	38

^aInsolation: langleys per day (1 langley = a cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: AUSTRIA

Population (millions):	7.5	GNP (US\$ billions):	40.1
Per capita income (US\$):	5,576	GNP per capita (US\$):	5,334
Primary language:	German	Energy production (quad Btu) ^a :	0.303
Urban/rural (%):	52/48	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	0.774
Monetary unit:	Schilling	Consumption per capita (MBtu) ^b :	102.82
Population density		Energy Reserves:	
per sq. mile:	232	Oil ^c :	0.754
per sq. kilometer:	90	Gas ^c :	0.365
		Trade with U.S.	
		From U.S. Imports:	312
		To U.S. Exports:	380

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Salzburg:												
Lat.: 47° 48' N												
Long.: 13° 00' E												
Insolation	96	160	250	319	414	383	380	229	283	192	76	66
Temperature	2.5	1.1	3.7	8.3	13.2	16.0	17.8	17.1	14.0	8.4	3.3	-0.9
Vienna:												
Lat.: 48° 15' N												
Long.: 16° 22' E												
Insolation	69	131	221	331	432	456	453	389	276	159	78	51
Temperature	-1.4	0.4	4.7	10.3	14.8	18.1	19.9	19.3	15.6	9.8	4.8	1.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Austria: 2343 Massachusetts Ave., NW
Washington, D.C. 20008
U.S.: IX Boltzmgasse 16
A-1091 Vienna, Austria
Tel: (222) 346611, 347511
Telex: 74634

Chambers of Commerce:

Bundeskammer der Gewerblichen
Wirtschaft
(Federal Economic Chamber)
Stubenring 12
1010 Vienna, Austria
(Promotes international contacts and
represents the economic interest of
trade and industry.)

STATISTICAL PROFILE: AUSTRIA (Concluded)Trade and Solar Interest Organizations:

Austrain Solar and Space Industry (ASSA)
Garnisongasse 7
A-1090 Vienna, Austria

Fachverband der Bavindustrie
Engelsberggasse 4
A-1090 Vienna, Austria
(building association)

Fachverband der Elektronindustrie
Rathausplatz 8
A-1090 Vienna, Austria
(electrical organization)

Fachverband der Gas - und
Warmeversorgungs - Unternehmungen
Bauernmarkt 13
A-1011 Vienna, Austria

Trade Fairs:

Vienna International Trade Fair
Messeplatz
A-1071 Vienna, Austria
(Twice yearly, March and September; all
categories of merchandise.)

Grazer Sud-Ost-Messe
Messeplatz 1
P.O. Box 63
A-8011 Graz, Austria
(Twice yearly, May and October; exhib-
its all categories with special emphasis
on agriculture and building.)

STATISTICAL PROFILE: BELGIUM

Population (millions):	9.8	GNP (US\$ billions):	66.7
Per capita income (US\$):	7,449	GNP per capita (US\$):	6,741
Primary language:	Flemish	Energy production (quad Btu) ^a :	0.234
Urban/rural (%):	95/5	Gross energy consumption ^a	
Literacy rate (%):	98	(quad Btu):	1.52
Monetary unit:	Franc	Consumption per capita (MBtu) ^b :	155.18
Population density		Energy Reserves:	
per sq. mile:	839	Oil ^c :	—
per sq. kilometer:	324	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	5,186
		To U.S. Exports:	1,741

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Brussels-UCCUE:												
Lat.: 50° 48' N												
Long.: 04° 22' E												
Insolation	58	106	185	288	382	397	383	329	242	142	69	41
Temperature	2.2	2.6	6.0	9.2	13.0	16.0	17.5	17.3	14.7	10.3	6.2	3.3

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Belgium: 3330 Garfield St., NW
Washington, D.C. 20008

U.S.: 27 Boulevard du Regent
B-1000
Brussels, Belgium
Tel: 513-3830
Telex: 846-21336

Chambers of Commerce:

Chambre de Commerce de Bruxelles
112 rue de Treves
1040 Brussels, Belgium

Trade and Solar Interest Organizations:

Belgian Solar Trade Association
(Heliobel)
Avenue Fonsny 114
B-1060 Brussels, Belgium

Trade Organizations (Contd.)

International Solar Energy Society
(ISES)
Belgian Section
Universite Libre de Bruxelles
Avenue F.D. Roosevelt 50
Bruxelles, Belgium

Association des Centrales Electriques
Industrielles de Belgique
36 rue Joseph II
B-1040 Brussels, Belgium
(industrial electricity)

Confederation Nationale de la
Construction (CNC)
34-42 rue de Lombard
B-1000 Brussels, Belgium
(civil engineering, road and building
contractors)

STATISTICAL PROFILE: BELGIUM (Concluded)**Trade Organizations (Contd.)**

Union des Exploitations Electriques en
Belgique
galerie Ravenstein 4
Box 6
B-1000 Brussels, Belgium
(electrical association)

Trade Fairs:

Foire Internationale de Bruxelles
(Brussels International Trade Fair)
Palais du Centenaire
Brussels, Belgium
(15 fairs per year)

STATISTICAL PROFILE: FINLAND

Population (millions):	4.7	GNP (US\$ billions):	26.6
Per capita income (US\$):	5,660	GNP per capita (US\$):	5,621
Primary language:	Finnish	Energy production (quad Btu) ^a :	0.0423
Urban/rural (%):	59/41	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	0.623
Monetary unit:	Markka	Consumption per capita (M/Btu) ^b	132.45
Population density		Energy Reserves:	
per sq. mile:	36	Oil ^c :	—
per sq. kilometer:	14	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	337
		To U.S. Exports:	449

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Helsinki:												
Lat.: 60° 12' N												
Long.: 24° 55' E												
Insolation	23	83	223	345	431	506	482	363	220	94	26	9
Temperature	-6.1	-6.6	-3.4	2.6	8.8	14.0	17.2	16.0	11.1	5.4	1.0	-2.6
Sodankyla:												
Lat.: 67° 22' N												
Long.: 26° 39' E												
Insolation	5	44	155	310	381	453	444	291	143	57	10	1
Temperature	-13.5	-13.0	-9.0	-2.1	4.9	11.3	14.7	12.0	6.2	-0.5	-5.8	-9.8

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Finland: 1900 24th St., NW
Washington, D.C. 20008
U.S.: Itainen Puistotie 14A
Helsinki, Finland
Tel: 171931
Telex: 121644 USEMB SF

Chambers of Commerce (Contd.):

Suomen Keskuskauppakamari
(The Central Chamber of Commerce)
Fabianinkatu 14
Helsinki 14, Finland

Trade Fairs:

Osuskunta Suomen Messut Helsingin
Kansainvalinen Messukeskus
(Finnish Fair Corporation)
POB 24
00521 Helsinki 52, Finland

Chambers of Commerce:

International Chamber of Commerce
(Finnish Section)
Fabianinkatu 14A
00100 Helsinki 10, Finland

STATISTICAL PROFILE: FRANCE

Population (millions):	53.1	GNP (US\$ billions):	346.7
Per capita income (US\$):	6,380	GNP per capita (US\$):	6,549
Primary language:	French	Energy production (quad Btu) ^a :	1.317
Urban/rural (%):	70,130	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	5.805
Monetary unit:	Franc	Consumption per capita (MBtu) ^b	110.47
Population density		Energy Reserves:	
per sq. mile:	249	Oil ^c :	0.232
per sq. kilometer:	96	Gas ^c :	6.0
		Trade with U.S.	
		From U.S. Imports:	5,587
		To U.S. Exports:	4,771

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Marseille:												
Lat.: 43° 27' N												
Long.: 05° 13' E												
Insolation	140	220	320	430	480	580	620	510	400	250	170	120
Temperature	5.5	6.6	10.0	13.0	16.8	20.8	23.3	22.8	19.9	15.0	10.2	6.9
Nantes:												
Lat.: 47° 15' N												
Long.: 01° 35' W												
Insolation	100	160	250	380	460	490	510	420	290	200	110	80
Temperature	5.0	5.3	8.4	10.8	13.9	17.2	18.8	18.6	16.4	12.2	8.2	5.5
Paris:												
Lat.: 48° 58' N												
Long.: 02° 27' E												
Insolation	75	131	248	337	431	481	456	382	291	170	85	62
Temperature	3.1	3.8	7.2	10.3	14.0	17.1	19.0	18.5	15.9	11.1	6.8	4.1

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

France: 2535 Belmont Rd., NW
 Washington, D.C. 20008
 U.S.: 2 Avenue Gabriel
 75382 Paris Cedex 08
 Paris, France
 Tel: 296-1202, 261-8075
 Telex: 65-221

Chambers of Commerce:

Chambre de Commerce de Paris
 27 ave. de Friedland
 75382 Paris Cedex 08, France

STATISTICAL PROFILE: FRANCE (Concluded)**Trade and Solar Interest Organizations:**

Association Francaise pour l'Etude et le
Development de l'Energie Solaire
(AFEDES)
28, rue de la Source
F-75016 Paris, France

Commissariat A L'energie Solaire
(COMES)
208, ru Raymond Losserland
75014 Paris, France
Tel: 545.67.60
Telx: COMES 203 712 F

Cooperation Mediterraneenne pour
l'Energie Solaire (COMPILES)
Palais de la Bourse
13.001 Marseille
France

Federation des Industries Electriques et
Electroniques (FIEE)
11 Rue Hamelin
75783 Paris-Cedex 16
(electrical association)

Development Organizations:

The Academie d'Energie solaire de
Perpignan
13, rue Jean-Racine
F-66000 Perpignan France
(Promotes use of solar energy.)

Metropole Internationale solaire (MIS)
10 rue Lamartine
F-06000 Nice France
(Organization to promote use of solar
energy)

U.S. International Marketing Center
12 Charles de Gaulle
92200 Nevelly
Tel: 624-3313
Telex: 610731

STATISTICAL PROFILE: WEST GERMANY

Population (millions):	61.4	GNP (US\$ billions):	457.5
Per capita income (US\$):	7,465	GNP per capita (US\$):	7,438
Primary language:	German	Energy production (quad Btu) ^a :	4.609
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	9.184
Monetary unit:	Mark	Consumption per capita (MBtu) ^b :	148.54
Population density		Energy Reserves:	
per sq. mile:	641	Oil ^c :	2.61
per sq. kilometer:	247	Gas ^c :	6.0
		Trade with U.S.	
		From U.S. Imports:	8,482
		To U.S. Exports:	10,955

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Hamburg:												
Lat.: 53° 38' N												
Long.: 10° 00' E												
Insolation	51	102	197	318	412	432	402	338	255	137	55	33
Temperature	0.0	0.3	3.3	7.5	12.0	15.3	17.0	16.6	13.5	9.1	4.9	1.8
Karlsruhe:												
Lat.: 49° 01' N												
Long.: 08° 23' E												
Insolation	68	148	240	342	502	518	525	370	302	202	69	52
Temperature	0.8	1.8	6.0	10.1	14.4	17.7	19.5	18.6	15.2	9.8	5.3	1.7

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Germany: 1717 Massachusetts Ave., NW
 Washington, D.C. 20036
 U.S: Deichmannsaue
 5300 Bonn 2
 Bonn, West Germany
 Tel: (02221) 89-55
 Telex: 885-452

Chambers of Commerce (Contd.):

Bundesstelle fur
 Aussenhandelsinformation
 (German Foreign Trade Information
 Office)
 Blaubach 13
 5 Cologne, West Germany

Chambers of Commerce:

Deutscher Industrie- und Handelstag
 (Association of German Chambers of
 Commerce and Industry)
 Adenauerallee 148
 53 Bonn, West Germany

Trade and Solar Interest Organizations:

Bundes Verband Solar Energie (BSE)
 Kruppstrasse 5
 D-4300 Essen 1
 Tel: 0201/1853392
 Telex: 0857851

STATISTICAL PROFILE: WEST GERMANY (Concluded)**Trade and Solar Interest Organizations:**

German Solar Energy Society
DGS Office
Goethestrasse 28
D-2800 Munich 2
Federal Republic of Germany

**International Solar Energy Society
(ISES)**

West German Section
VDI - Gesellschaft Energietechnik
4 Dusseldorf 1
Postfach 1139
Federal Republic of Germany

Bundesvereinigung der Deutschen
Ernahrungsindustrie
Stressemanallee 19
6000 Frankfurt a.M. 70
(electrical equipment)

Hauptverband der Deutschen
Bauindustrie
Abraham-Lincoln Strasse 30
6200 - Wiesbaden
Federal Republic of Germany
(building association)

Trade Fairs:

Berlin:
AMK Berlin Ausstellungen - Messe -
Kongress - G.m.b.H.
Messedamm 22
1000 Berlin 19
Federal Republic of Germany

Minich:
Munchener Messe-und
Ausstellungsgesellschaft m.b.H.
Messegelände
P.O.B. 12 10 09
8000 Munich 12
Federal Republic of Germany

U.S. International Trade Center
Bahnhofstrasse 1-9
ABC Haus
5000 Koein, Cologne
Tel: (0221) 137091
Telex: 888-3267

STATISTICAL PROFILE: GREECE

Population (millions):	9.3	GNP (US\$ billions):	23.6
Per capita income (US\$):	2,701	GNP per capita (US\$):	2,575
Primary language:	Greek	Energy production (quad Btu) ^a :	0.171
Urban/rural (%):	65/35	Gross energy consumption ^a	
Literacy rate (%):	84	(quad Btu):	0.525
Monetary unit:	Drachma	Consumption per capita (MBtu) ^b	58.05
Population density		Energy Reserves:	
per sq. mile:	180	Oil ^c :	0.87
per sq. kilometer:	69	Gas ^c :	4.0
		Trade with U.S.	
		From U.S. Imports:	812
		To U.S. Exports:	183

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Athens:												
Lat.: 37° 58' N												
Long.: 23° 43' E												
Insolation	180	276	334	457	516	577	572	498	396	276	187	161
Temperature	9.3	9.9	11.3	15.3	20.0	24.6	27.6	27.4	23.5	19.0	14.7	11.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Greece: 2221 Massachusetts Ave.,
NW
Washington, D.C. 20008
U.S.: 91 Vasilissis Sophias Blvd.
Athens, Greece
Tel: 712951 or 718401
Telex: 21-5548

Chambers of Commerce:

Athens Chamber of Commerce and
Industry
7 Akadenias St.
Athens 134, Greece

Trade Fairs:

International Fair of Thessaloniki
Thessaloniki, Greece

STATISTICAL PROFILE: ICELAND

Population (millions):	0.2	GNP (US\$ billions):	1.4
Per capita income (US\$):	7,401	GNP per capita (US\$):	6,273
Primary language:	Icelandic	Energy production (quad Btu) ^a :	0.60761
Urban/rural (%):	87/13	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	0.0285
Monetary unit:	Kronur	Consumption per capita (MBtu) ^b	131.17
Population density		Energy Reserves:	
per sq. mile:	5.5	Oil ^c :	NA
per sq. kilometer:	2.1	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	48
		To U.S. Exports:	225

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Reykjavik:												
Lat.: 64° 08' N												
Long.: 21° 54' W												
Insolation	12	56	138	264	396	366	406	298	165	66	18	5
Temperature	-0.4	-0.1	1.5	3.1	6.9	9.5	11.2	10.8	8.6	4.9	2.6	0.9

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Iceland: 2022 Connecticut Ave., NW
 Washington, D.C. 20008
 U.S: Laudasvegur 21
 Reykjavik, Iceland
 Tel: 29100

Chambers of Commerce:
 Verslunarrad Islands
 POB 514
 101 Reykjavik, Iceland

STATISTICAL PROFILE: IRELAND

Population (millions):	3.2	GNP (US\$ billions):	8.1
Per capita income (US\$):	2,711	GNP per capita (US\$):	2,559
Primary language:	English	Energy production (quad Btu) ^a :	0.0648
Urban/rural (%):	52/48	Gross energy consumption ^a	(quad Btu): 0.269
Literacy rate (%):	99	Consumption per capita (MBtu) ^b :	86.07
Monetary unit:	Pound	Energy Reserves:	
Population density		Oil ^c :	—
per sq. mile:	117	Gas ^c :	0.95
per sq. kilometer:	45	Trade with U.S.	
		From U.S. Imports:	695
		To U.S. Exports:	323

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Valentia:												
Lat.: 51° 56' N												
Long.: 10° 15' E												
Insolation	75	118	209	352	454	472	383	348	245	140	77	53
Temperature	6.9	6.8	8.3	9.4	11.4	13.8	15.0	15.4	14.0	11.6	9.1	7.8

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Ireland: 2234 Massachusetts Ave., NW
 Washington, D.C. 20008
 U.S.: 42 Elgin Rd.
 Ballsbridge
 Dublin, Ireland
 Tel: Dublin 688777
 Telex: 5240

Trade and Solar Interest Organizations:
 International Solar Energy Society (ISES)
 Irish Section
 School of Architecture
 University College
 Earlsfort Terrace
 Dublin 2, Ireland

Chambers of Commerce:
 Association of Chambers of Commerce
 of Ireland
 7 Clare St.
 Dublin 2, Ireland

STATISTICAL PROFILE: ITALY

Population (millions):	56.4	GNP (US\$ billions):	171.3
Per capita income (US\$):	2,723	GNP per capita (US\$):	3,048
Primary language:	Italian	Energy production (quad Btu) ^a :	0.751
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	94	(quad Btu):	4.671
Monetary unit:	Lira	Consumption per capita (MBtu) ^b	
Population density		Energy Reserves:	83.7
per sq. mile:	483	Oil ^c :	3.712
per sq. kilometer:	187	Gas ^c :	3.5
		Trade with U.S.	
		From U.S. Imports:	4,359
		To U.S. Exports:	4,918

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Messina:												
Lat.: 38° 12' N												
Long.: 15° 33' E												
Insolation	151	222	315	395	512	570	594	515	387	266	167	136
Temperature	11.5	11.4	12.8	14.9	18.4	22.6	25.4	25.9	23.4	19.7	15.9	13.0
Milan:												
Lat.: 45° 28' N												
Long.: 09° 17' E												
Insolation	62	133	220	366	493	499	515	430	325	188	84	47
Temperature	2.0	4.0	8.6	12.7	17.9	21.7	24.1	23.5	19.1	13.1	7.1	3.8
Rome:												
Lat.: 41° 48' N												
Long.: 12° 36' E												
Insolation	147	206	257	372	482	546	559	483	363	262	153	118
Temperature	6.9	7.7	10.8	13.9	18.1	22.1	24.7	24.5	21.1	16.4	11.7	8.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Italy: 1601 Fuller St., NW
 Washington, D.C. 20009
 U.S.: Via Vittorio Veneto 119-A
 00187 Rome, Italy
 Tel: (06)4674
 Telex: 613425 Amembro
 610450 Amembro

Embassies (Contd.):
 U.S. International Marketing Center
 Via Gattamelata 5 (Milan Fairgrounds)
 20149 Milan
 Tel: 469-6451
 Telex: 330208

STATISTICAL PROFILE: ITALY (Concluded)Chambers of Commerce:

Unione Italiana delle Camere di
Commercio, Industria, Agricoltura e
Artigianato
(Italian Union of Chambers of Commerce
Industry, Agriculture and Crafts)
Piazza Sallustio 21
00187 Rome, Italy

Trade and Solar Interest Organizations:

International Solar Energy Society
(ISES)
Italien Section
Via Crispi 72
80121 Naples, Italy
Tel: 669325

Associazione Nazionale Costruttori
Edili (ANCE)
Via Guattani 16
00161 Rome
Italy
(national builders association)

Trade Organizations (Cont.):

Associazione Nazionale Installatori di
Impianti Termici e de Ventilazione
Idrici, Sanitari, Elettrici, Telefonici
ed Affini (ASSISTAL)
Piazza della Repubblica 6
20121 Milan
(national association of heating,
ventilation, hydraulic, sanitary and
electrical plant)

COMFINDUSTRIA
Via le dell'Astronomia 30
00144 Rome

STATISTICAL PROFILE: NETHERLANDS

Population (millions):	13.8	GNP (US\$ billions):	85.3
Per capita income (US\$):	6,989	GNP per capita (US\$):	6,196
Primary language:	Dutch	Energy production (quad Btu) ^a :	3.106
Urban/rural (%):	77/23	Gross energy consumption ^a	(quad Btu): 2.194
Literacy rate (%):	98	Consumption per capita (MBtu) ^b :	160.71
Monetary unit:	Guilder	Energy Reserves:	
Population density		Oil ^c :	1.653
per sq. mile:	866	Gas ^c :	62.0
per sq. kilometer:	335	Trade with U.S.	
		From U.S. Imports:	6,907
		To U.S. Exports:	1,852

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
De Bilt:												
Lat.: 52° 06' N												
Long.: 05° 11' E												
Insolation	62	100	210	309	419	455	411	329	252	133	62	39
Temperature	1.7	2.0	5.0	8.5	12.4	15.5	17.0	16.8	14.3	10.0	5.9	3.0

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Netherlands: 4200 Linnean Ave., NW
Washington, D.C. 20008
U.S.: Lange Voorhout 102
The Hague, Netherlands

Trade Fairs:

Koninklijke Nederlandse Jaarbeurs (Int)
(Royal Netherlands Industries Fair)
Utrecht, Netherlands

Chambers of Commerce:

Nederlandse Organisatie voor de
Internationale Kamer van Koophandel
(Netherlands Committee of the
International Chamber of Commerce)
Prinses Beatrixlaan 5
The Hague, Netherlands

STATISTICAL PROFILE: NORWAY

Population (millions):	4.0	GNP (US\$ billions):	29.9
Per capita income (US\$):	7,253	GNP per capita (US\$):	7,432
Primary language:	Norwegian	Energy production (quad Btu) ^a :	0.654
Urban/rural (%):	45/55	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	0.5129
Monetary unit:	Kroner	Consumption per capita (MBtu) ^b :	128.0
Population density		Energy Reserves:	
per sq. mile:	32	Oil ^c :	31.9
per sq. kilometer:	12	Gas ^c :	42.7
		Trade with U.S.:	
		From U.S. Imports:	688
		To U.S. Exports:	1,266

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Bergen:												
Lat.: 60° 24' N												
Long.: 05° 19' E												
Insolation	22	57	200	248	419	416	336	276	151	64	27	10
Temperature	1.5	1.3	3.1	5.8	10.2	12.6	15.0	14.7	12.0	8.3	5.5	3.3
Tromso:												
Lat.: 69° 39' N												
Long.: 18° 57' E												
Insolation	1	27	110	266	341	380	362	249	135	44	5	0
Temperature	-3.5	-4.0	-2.7	0.3	4.1	8.8	12.4	11.0	7.2	3.0	-0.1	-1.9

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Norway: 3401 Massachusetts Ave., NW
 Washington, D.C. 20007
 U.S.: Drammensveien 18
 Oslo 1, Norway
 Tel: 56-68-80
 Telex: 18470

Chambers of Commerce:
 Oslo Handelskammer
 (Oslo Chamber of Commerce)
 Drammensveien 30
 Oslo 2, Norway

STATISTICAL PROFILE: PORTUGAL

Population (millions):	8.7	GNP (US\$ billions):	16.5
Per capita income (US\$):	1,498	GNP per capita (US\$):	1,700
Primary language:	Portuguese	Energy production (quad Btu) ^a :	0.0281
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	65	(quad Btu):	0.239
Monetary unit:	Escudo	Consumption per capita (MBtu) ^b	24.84
Population density		Energy Reserves:	
per sq. mile:	273	Oil ^c :	—
per sq. kilometer:	105	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	691
		To U.S. Exports:	244

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Lisbon:												
Lat.: 38° 43' N												
Long: 09° 09' W												
Insolation	195	296	366	540	626	691	720	626	482	354	241	173
Temperature	10.8	11.6	13.6	15.6	17.2	20.1	22.2	22.5	21.2	18.2	14.4	11.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Portugal: 2125 Kalorama Rd., NW
 Washington, D.C. 20008
 U.S.: Av. Duque de Louie No. 39
 1098 Lisbon Codex, Portugal
 Tel: 570102
 Telex: 12528 AMEMB

Other:

Instituto Do Investimento Estrangeiro
 (I.I.E.)
 Avda. da Liberdade 258, 3-4°
 Lisbon
 (Supports and guides foreign investors
 and foreign exporters of technology.
 Grants legal permission for direct for-
 eign investment and contracts for the
 transfer of technology.)

Chambers of Commerce:

International Chamber of Commerce
 Rua das Portas de Santo Antao 89
 Lisbon 2, Portugal

STATISTICAL PROFILE: SPAIN

Population (millions):	36.7	GNP (US\$ billions):	104.1
Per capita income (US\$):	2,896	GNP per capita (US\$):	2,904
Primary language:	Spanish	Energy production (quad Btu) ^a :	0.566
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	92	(quad Btu):	2.117
Monetary unit:	Peseta	Consumption per capita (MBtu) ^b	59.86
Population density		Energy Reserves:	
per sq. mile:	184	Oil ^c :	2.03
per sq. kilometer:	71	Gas ^c :	3.5
		Trade with U.S.	
		From U.S. Imports:	2,507
		To U.S. Exports:	1,304

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Almeria:												
Lat.: 37° N												
Long.: 2.5° W												
Insolation	215	296	403	503	552	588	595	541	443	337	241	190
Temperature	11.7	11.8	14.1	16.1	18.4	22.0	24.7	25.3	23.4	19.4	15.6	12.8
Madrid:												
Lat.: 40.5° N												
Long.: 3.5° W												
Insolation	157	256	331	474	531	575	606	537	403	284	187	141
Temperature	4.9	6.5	10.0	13.0	15.7	20.6	24.2	23.6	19.8	14.0	8.9	5.6

quad = quadrillion (10^{15}).

Insolation: langley (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Spain: 2700 15th St., NW
Washington, D.C. 20009
U.S.: Serrano 75
Madrid, Spain
Tel: 276-3400
Telex: 27763

Chambers of Commerce:

International Chamber of Commerce
Claudio Coello 19-1°
Madrid, Spain

Chamber of Commerce (Contd.):

Consejo Superior de las Camaras
Oficiales de Comercio, Industrie y
Navegacion de Espana
(Supreme Council of the Official
Chamber of Commerce, Industry and
Navigation of Spain)
Calle Claudio Coelle 19-1°
Madrid, Spain

STATISTICAL PROFILE: SPAIN (Concluded)Development Organizations:

Ministerio de Industria y Energia
Centro de Estudios de la Energia
Madrid, Spain
(government agency for energy
development)

Other:

Cooperation Mediterraneeenne paer
l'Energie Solaire
Paseo del Pintor Rosales, 34
Madrid (8), Spain

STATISTICAL PROFILE: SWEDEN

Population (millions):	8.3	GNP (US\$ billions):	71.3
Per capita income (US\$):	8,369	GNP per capita (US\$):	8,671
Primary language:	Swedish	Energy production (quad Btu) ^a :	0.238
Urban/rural (%):	83/17	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	1.407
Monetary unit:	Kronor	Consumption per capita (MBtu) ^b	171.38
Population density		Energy Reserves:	
per sq. mile:	47	Oil ^c :	—
per sq. kilometer:	18	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	1,513
		To U.S. Exports:	1,652

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Stockholm:												
Lat.: 59° 21' N												
Long.: 17° 57' E												
Insolation	28	83	202	298	434	488	465	356	226	100	32	17
Temperature	-2.9	-3.1	-0.7	4.4	10.1	14.9	17.8	16.6	12.2	7.1	2.8	0.1

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Sweden: 600 New Hampshire Ave., NW
 Washington, D.C. 20037
 U.S.: Strandvagen 101
 Stockholm, Sweden
 Tel: (08) 63.05.20
 Telex: 12060 AMEMB S

Trade and Solar Interest Organizations:

Sveriges Elektroindustrieforening
 Storgatan 19
 11485 Stockholm, Sweden
 (Swedish Electrical Manufacturers
 Assn.)

Chambers of Commerce:

International Chamber of Commerce
 Vastra Tradgardsgatan 9
 POB 106050
 S-III 53
 Stockholm 16, Sweden

International Solar Energy Society
 (ISES)

Scandinavian Section
 VVS Tekniska Foreninger
 Hantuerkargatan 8
 S-112-21 Stockholm
 Sweden

STATISTICAL PROFILE: SWITZERLAND

Population (millions):	6.3	GNP (US\$ billions):	56.9
Per capita income (US\$):	8,918	GNP per capita (US\$):	8,671
Primary language:	German/French	Energy production (quad Btu) ^a :	0.138
Urban/rural (%):	55/45	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	0.6504
Monetary unit:	Franc	Consumption per capita (MBtu) ^b :	101.0
Population density		Energy Reserves:	
per sq. mile:	398	Oil ^c :	—
per sq. kilometer:	154	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	3,660
		To U.S. Exports:	2,076

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Zurich:												
Lat.: 47° 23' N												
Long.: 08° 33' E												
Insolation	77	135	251	360	407	515	493	411	304	152	88	62
Temperature	-1.1	0.3	4.5	8.6	12.7	15.9	17.6	17.0	14.0	8.6	3.7	0.1

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Switzerland: 2900 Cathedral Ave., NW
Washington, D.C. 20008
U.S.: Jubilaemstrasse 93
3005 Bern, Switzerland
Tel: (031) 437011
Telex: 32128

Chambers of Commerce:

Chambre de Commerce et d'Industrie de
Geneve
1 rue Petitot
1211 Geneva II, Switzerland

Trade and Solar Interest Organizations:

Schweizerischer Baumeisterverband
Weinbergstrasse 49
8035-Zurich, Switzerland
(building contractors association)

Trade Fairs:

National Fair
Camptoir Suisse
Palais de Beaulieu
1002 Lausanne, Switzerland

STATISTICAL PROFILE: UNITED KINGDOM

Population (millions):	55.9	GNP (US\$ billions):	225.2
Per capita income (US\$):	3,898	GNP per capita (US\$):	4,026
Primary language:	English	Energy production (quad Btu) ^a :	5.113
Urban/rural (%):	70/30	Gross energy consumption ^a	
Literacy rate (%):	98	(quad Btu):	8.207
Monetary unit:	Pound	Consumption per capita (MBtu) ^b :	146.65
Population density		Energy Reserves:	
per sq. mile:	594	Oil ^c :	85.84
per sq. kilometer:	229	Gas ^c :	24.8
		Trade with U.S.	
		From U.S. Imports:	10,635
		To U.S. Exports:	8,029

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Cambridge:												
Lat.: 52° 13' N												
Long.: 00° 06' E												
Insolation	60	102	190	284	398	428	412	320	246	151	67	42
Temperature	3.4	3.9	6.1	-8.8	11.9	15.1	17.0	16.7	14.3	10.4	6.7	4.5
Lerwick Observatory:												
Lat.: 60° 08' N												
Long.: 01° 11' W												
Insolation	27	74	152	260	358	421	321	246	195	89	36	15
Temperature	3.1	2.9	3.9	5.4	7.8	10.0	12.0	12.1	10.6	8.2	5.9	4.4
London:												
Lat.: 51° 28' N												
Long.: 00° 19' W												
Insolation	48	90	170	287	372	410	376	317	234	130	63	38
Temperature	4.2	4.4	6.6	9.3	12.4	15.8	17.6	17.2	14.8	10.8	-7.2	5.2

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

United Kingdom: 3100 Massachusetts Ave.
Washington, D.C. 20008
U.S.: 24/31 Grosvenor Sq.
W 1A 1AE
London, England
Kingman Brewster, Jr.
(AMB)
Tel: (01) 499-9000
Telex: 266777

Chambers of Commerce:

Association of British Chambers of
Commerce
6-14 Dean Farrar St.
London, SW 1, England

STATISTICAL PROFILE: UNITED KINGDOM (Concluded)Trade and Solar Interest Organizations:

International Solar Energy Society (ISES)
United Kingdom Section
The Royal Institution
19 Albemarle Street
London, W1X 4BS, England
Contact: Dr. J. Barber

Confederation of British Industry
21 Tothill Street
London, SW1, England
(Acts as a reference point for all seeking views of industry and is recognized internationally as the representative organization of British industry and management.)

Other:

U.S. International Marketing Center
c/o U.S. Embassy

Solar Trade Association, Fed.
26 Store Street
London WC1E 7BT
Tel: 01-6364717
Ex. Sec.: J. R. Stammers

STATISTICAL PROFILE: MIDDLE EAST

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density (sq m) (sq k)		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							Oil	Gas						Export	Import		
Iran	34.3	1,986	Persian	47/53	37	Rial	53	20*	66.3	1,972	11.856	1.241	37.85	333.5	485	2,784	1,019
Iraq	11.9	1,159	Arabic	66/44	26	Dinar	72	28	15.9	1,385	4.602	0.220	19.81	174	27.45	618	442
Israel	3.5	3,460	Hebrew/ Arabic	82/18	88	Pound	440	170	14.0	3,960	0.202	0.262	78.00	0.0058	100	749	1,857
Jordan	2.3	552	Arabic	42/58	32	Dinar	58	23	1.7	615	—	0.0306	11.34	—	—	4	334
Kuwait	1.1	11,431	Arabic	NA	55	Dinar	150	58	16.5	15,984	4.565	0.241	242.5	376.42	30.8	87	765
Lebanon	3.1	589	Arabic	60/40	86	Pound	775	299	3.3	1,107	0.00272	0.074	24.21	—	—	15	227
Saudi Arabia	9.5	5,616	Arabic	NA	15	Riyal	9.2	3.5	38.5	5,067	14.731	0.348	47.72	957	110.0	7,983	4,875
Syria	7.8	676	Arabic	48/52	40	Pound	106	41	6.0	786	0.399	0.0974	13.23	11.252	1.5	165	229
Yemen (Arab Republic)	5,238	122	Arabic	NA	10	Rial	70	27	1.5	294	—	0.00911	1.75	NA	NA	2	214

INSOLATION: MIDDLE EAST^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Iran	—	—	—	—	—	—	—	—	—	—	—	—
Iraq	—	—	—	—	—	—	—	—	—	—	—	—
Israel Jerusalem	290	361	456	586	674	737	723	675	579	454	322	262
Jordan	—	—	—	—	—	—	—	—	—	—	—	—
Kuwait	—	—	—	—	—	—	—	—	—	—	—	—
Lebanon Ksara	217	316	414	535	642	725	716	656	550	403	274	200
Saudi Arabia	—	—	—	—	—	—	—	—	—	—	—	—
Syria	—	—	—	—	—	—	—	—	—	—	—	—

^aInsolation: langley per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: IRAN

Population (millions):	34.3	GNP (US\$ billions):	66.3
Per capita income (US\$):	1,986	GNP per capita (US\$):	1,972
Primary language:	Persian	Energy production (quad Btu) ^a :	11.856
Urban/rural (%):	47/53	Gross energy consumption ^a	
Literacy rate (%):	37	(quad Btu):	1.241
Monetary unit:	Rial	Consumption per capita (MBtu) ^b :	37.85
Population density		Energy Reserves:	
per sq. mile:	53	Oil ^c :	333.5
per sq. kilometer:	20	Gas ^c :	485
		Trade with U.S.	
		From U.S. Imports:	1,019
		To U.S. Exports:	2,784

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Tehran:												
Lat.: 35° 42' N												
Long.: 51° 25' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	3.1	4.5	9.1	15.2	20.3	26.1	29.1	28.7	24.3	17.9	11.6	5.5

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads

Embassies:

Iran: 3005 Massachusetts Ave., NW
Washington, D.C. 20008
U.S.: 260 Takhte Jamshid Avenue
P.O. Box 50 or Box 2000
Tehran, Iran
Tel: 820091/9, 824-001,
820-091, 829-051

Chambers of Commerce:

Iran Chamber of Commerce, Industry
and Mines
254 Ave. Takht-Jamshid
Tehran, Iran

STATISTICAL PROFILE: IRAQ

Population (millions):	11.9	GNP (US\$ billions):	15.9
Per capita income (US\$):	1,159	GNP per capita (US\$):	1,385
Primary language:	Arabic	Energy production (quad Btu) ^a :	4.602
Urban/rural (%):	66/34	Gross energy consumption ^a	
Literacy rate (%):	26	(quad Btu):	0.220
Monetary unit:	Dinar	Consumption per capita (MBtu) ^b	19.81
Population density		Energy Reserves:	
per sq. mile:	72	Oil ^c :	174
per sq. kilometer:	28	Gas ^c :	27.45
		Trade with U.S.	
		From U.S. Imports:	442
		To U.S. Exports:	618

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Baghdad:												
Lat.: 33° 20' N												
Long.: 44° 24' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	9.8	12.9	15.4	21.6	27.7	31.8	34.2	33.9	30.3	24.8	17.6	11.3

quad = quadrillion (10^{15}).

Insolation: langley (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Iraq:

U.S.: Opp. For. Ministry Club (Masbah Quarter)

P.O. Box 2447 Alwiyah

Baghdad, Iraq

Tel: 96138

Telex: 2287 USINT 1K

Embassy was closed June 7, 1967. The government of Belgium serves as protective power for the United States in Iraq.

Chamber of Commerce:

Federation of Iraqi Chambers of Commerce

Mustansir St.

Baghdad, Iraq

Trade Fairs:

Baghdad International Fair

Damascus St.

Baghdad, Iraq

STATISTICAL PROFILE: ISRAEL

Population (millions):	3.5	GNP (US\$ billions):	14.0
Per capita income (US\$):	3,460	GNP per capita (US\$):	3,960
Primary language:	Hebrew/Arabic	Energy production (quad Btu) ^a :	0.202
Urban/rural (%):	82/18	Gross energy consumption ^a	
Literacy rate (%):	88	(quad Btu):	0.262
Monetary unit:	Pound	Consumption per capita (MBtu) ^b	78.0
Population density		Energy Reserves:	
per sq. mile:	440	Oil ^c :	0.0058
per sq. kilometer:	170	Gas ^c :	0.1
		Trade with U.S.	
		From U.S. Imports:	1,857
		To U.S. Exports:	749

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Jerusalem:												
Lat.: 31° 46' N												
Long.: 35° 15' E												
Insolation	290	361	456	586	674	737	723	675	579	454	322	262
Temperature	47.8	49.1	52.0	59.9	69.4	72.3	74.5	74.8	72.0	68.4	61.5	51.8

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Israel: 1621 22nd. Ave., NW
Washington, D.C. 20008
U.S.: 71 Hayarkon Street
Tel Aviv, Israel
Tel: 54338
Telex: 33378

Trade and Solar Interest Organizations:

International Solar Energy Society
Israel Section
Faculty of Mechanical Engineering
Israel Institute of Technology
Haifa 32000
Israel

Chambers of Commerce:

Federation of Israeli Chambers of Commerce
POB 501
Tel-Aviv, Israel

Federation of Bi-National Chambers of Commerce with Israel
99 Adad Haam St.
Tel-Aviv, Israel
POB 1127

Development Organizations:

The Agricultural Union
Tchlenov 20
Tel-Aviv, Israel
Consists of 50 agricultural settlements and is connected with marketing and supplying organizations.

STATISTICAL PROFILE: JORDAN

Population (millions):	2.3	GNP (US\$ billions):	1.7
Per capita income (US\$):	552	GNP per capita (US\$):	615
Primary language:	Arabic	Energy production (quad Btu) ^a :	—
Urban/rural (%):	42/58	Gross energy consumption ^a	
Literacy rate (%):	0.32	(quad Btu):	0.0306
Monetary unit:	Dinar	Consumption per capita (MBtu) ^b :	11.34
Population density		Energy Reserves:	
per sq. mile:	58	Oil ^c :	—
per sq. kilometer:	23	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	334
		To U.S. Exports:	4

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Amman:												
Lat.: 31° 57' N												
Long.: 35° 59' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	8.2	9.3	14.1	16.2	20.8	23.6	25.2	25.6	23.5	20.7	15.3	10.1

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Jordan: 2319 Wyoming Ave., NW
Washington, D.C. 20008

U.S.: Jebel Amman
Madi Bldg., 2nd fl., King Faisal
Street
Amman, Jordan
Tel: 38930/38724

Chambers of Commerce:

Amman Chamber of Commerce
POB 287
Amman, Jordan

Chamber of Industry
POB 1800
Amman, Jordan

STATISTICAL PROFILE: KUWAIT

Population (millions):	1.1	GNP (US\$ billions):	16.5
Per capita income (US\$):	11,431	GNP per capita (US\$):	15,984
Primary language:	Arabic	Energy production (quad Btu) ^a :	4.565
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	55	(quad Btu):	0.241
Monetary unit:		Consumption per capita (MBtu) ^b :	242.5
Population density		Energy Reserves:	
per sq. mile:	150	Oil ^c :	376.42
per sq. kilometer:	58	Gas ^c :	30.8
		Trade with U.S.	
		From U.S. Imports:	765
		To U.S. Exports:	87

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Fahaheel:												
Lat.: 29° 03' N												
Long.: 48° 09' E												
Insolation												
Temperature	13.8	15.4	18.9	23.7	29.6	34.8	36.1	36.1	32.7	27.2	20.9	15.3

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Kuwait: 2940 Tilden St., NW
Washington, D.C. 20008
U.S: P.O. Box 77 Safat
Kuwait
Tel: 424-151

Chambers of Commerce:

Kuwait Chamber of Commerce and Industry
POB 775 Chambers Building
Ali Salem St.
Kuwait State, Kuwait

STATISTICAL PROFILE: LEBANON

Population (millions):	3.1	GNP (US\$ billions):	3.3
Per capita income (US\$):	589	GNP per capita (US\$):	1,107
Primary language:	Arabic	Energy production (quad Btu) ^a :	0.00272
Urban/rural (%):	60/40	Gross energy consumption ^a	
Literacy rate (%):	86	(quad Btu):	0.074
Monetary unit:	Pound	Consumption per capita (MBtu) ^b :	24.21
Population density		Energy Reserves:	
per sq. mile:	775	Oil ^c :	—
per sq. kilometer:	299	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	227
		To U.S. Exports:	15

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Ksara Observatory:												
Lat.: 33° 49' N												
Long.: 35° 52' E												
Insolation	217	316	414	535	642	725	716	656	550	403	274	200
Temperature	42.4	44.4	49.3	57.4	65.3	71.2	75.2	75.7	71.1	64.6	54.5	45.9

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Lebanon: 2560 28th St., NW
Washington, D.C. 20008
Najati, Kabbani (AMB)

U.S.: Corniche at Rue Ain Mreisseh
Beirut, Lebanon
Tel: 361-964, 361-800

Chambers of Commerce:

Beirut Chamber of Commerce and Industry
Sanayeh Spears St.
Chamber of Commerce and Industry
Building
POB 111801
Beirut, Lebanon

STATISTICAL PROFILE: SAUDI ARABIA

Population (millions):	9.5	GNP (US\$ billions):	38.5
Per capita income (US\$):	5,616	GNP per capita (US\$):	5,067
Primary language:	Arabic	Energy production (quad Btu) ^a :	14.731
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	15	(quad Btu):	0.348
Monetary unit:	Riyal	Consumption per capita (MBtu) ^b :	47.72
Population density		Energy Reserves:	
per sq. mile:	9.2	Oil ^c :	957
per sq. kilometer:	3.5	Gas ^c :	110.0
		Trade with U.S.	
		From U.S. Imports:	4,875
		To U.S. Exports:	7,983

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Riyadh:												
Lat.: 24° 42' N												
Long.: 46° 43' E												
Insolation												
Temperature	14.1	16.4	21.0	24.5	30.6	33.4	34.4	34.2	31.1	26.0	20.0	15.1

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Saudi Arabia: 1520 18th St., NW
Washington, D.C. 20036
U.S.: Palestine Road
Ruwais
Jidda, Saudi Arabia
Tel: 53410, 54110,
52188, 52396,
52589

Trade Organizations:

International Solar Energy Society (ISES)
Arab Section
College of Engineering
P.O. Box 800
Riyadh, Saudi Arabia

Chambers of Commerce:

Chamber of Commerce and Industries
POB 1264
Jeddah, Saudi Arabia

STATISTICAL PROFILE: SYRIA

Population (millions):	7.8	GNP (US\$ billions):	6.0
Per capita income (US\$):	676	GNP per capita (US\$):	786
Primary language:	Arabic	Energy production (quad Btu) ^a :	0.399
Urban/rural (%):	48/52	Gross energy consumption ^a	
Literacy rate (%):	40	(quad Btu):	0.0974
Monetary unit:	Pound	Consumption per capita (MBtu) ^b	13.23
Population density		Energy Reserves:	
per sq. mile:	106	Oil ^c :	11.252
per sq. kilometer:	41	Gas ^c :	1.5
		Trade with U.S.	
		From U.S. Imports:	229
		To U.S. Exports:	165

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Damascus:												
Lat.: 33° 29' N												
Long.: 36° 14' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	7.5	8.8	11.6	16.4	21.3	24.0	26.5	27.1	23.0	22.7	13.3	8.8

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Syria: 2215 Wyoming Ave., NW
Washington, D.C. 20008

U.S: Abu Rumaneh
Rue al Mansour No. 2
P.O. Box 29
Damascuse, Syria
Tel: 332315, 332814, 330416
Telex: 11919 USDAMA SY

Chambers of Commerce:

Damascus Chamber of Commerce
B.P. 1040
Mon'awiah St.
Damascuse, Syria

STATISTICAL PROFILE: YEMEN

Population (millions):	5.238	GNP (US\$ billions):	1.5
Per capita income (US\$):	122	GNP per capita (US\$):	294
Primary language:	Arabic	Energy production (quad Btu) ^a :	—
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.00911
Monetary unit:	Rial	Consumption per capita (MBtu) ^b	1.75
Population density		Energy Reserves:	
per sq. mile:	70	Oil ^c :	NA
per sq. kilometer:	27	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	214
		To U.S. Exports:	2 or Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Sanaa:												
Lat.: 15° 23' N												
Long.: 44° 12' E												
Insolation												
Temperature	13.8	15.4	16.5	17.0	18.7	19.3	20.9	20.9	17.6	13.8	15.4	11.0

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = less than \$500,000.

Embassies:

Yemen: 600 New Hampshire Ave.,
NW
(Arab Republic) Washington, D.C. 20008
Yama M. Al-Mutalwakel
(AMB)
U.S.: Box 33
Sana, Yemen
Tel: 2790, 5826, 4407,
2506

Chambers of Commerce:

Hodeida Chamber of Commerce
Tahrir Square
POB 3370
Hodeida, Yemen

SERIO 

STATISTICAL PROFILE: AFRICA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Used Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
Algeria	17.9	876	Arabic	52/48	26	Dinar	20	7.5	16.1	928	2.316	0.3517	20.95	47.56	131.5	4,940	404
Burundi	4.0	69	French	2/98	10	Franc	360	139	0.46	119	—	0.00133	0.36	NA	NA	37	3
C.A. E.	—	205	French	NA	12	Franc	11	4.4	0.42	53	0.000166	0.00169	0.64	NA	NA	5.0	1
Chad	4.1	165	French	14/86	7	Franc	9.0	3.5	0.51	124	—	0.00439	1.08	NA	NA	Z	3
Egypt	38.7	448	Arabic	44/56	40	Pound	99	38	10.5	275	0.369	0.419	11.25	16.82	2.97	381	1,433
Ethiopia	29.0	91	Amharic	12/88	7	Birr	61	23	2.9	103	0.00119	0.0222	0.81	—	—	109	104
Guinea Bissau	0.54	318	Portuguese	NA	NA	Escudo	38	15	0.07	131	—	0.00119	2.23	NA	NA	NA	NA
Ivory Coast	5.2	1,150	French	32/68	20	CFA Franc	56	22	4.3	609	0.000944	0.0497	7.45	.29	—	363	128
Kenya	14.3	276	Swahili	10/90	25	Shilling	62	24	3.3	237	0.00222	0.0646	4.84	—	—	50	61
Liberia	1.7	422	English	28/72	10	Dollar	37	14	0.72	450	0.00108	0.0191	12.37	—	—	136	108
Libya	1.9	6,451	Arabic	30/70	30	Dinar	3.5	1.3	16.0	6,324	3.102	0.0882	36.15	133.4	23.8	5,256	468
Madagascar	8.5	230	Malagasy	14/86	39	Franc	34	13	1.9	244	0.000583	0.0149	2.0	—	—	Z	7
Mali	6.0	96	French	NA	10	Franc	13	4.9	0.59	98	0.000111	0.00391	0.67	NA	NA	69	61
Mauritania	1.2	240	French	23/77	5	Ouguiya	3.7	1.4	0.46	311	—	0.00397	3.0	NA	NA	Z	7
Morocco	18.2	440	Arabic	32/68	20	Dirham	101	39	9.2	517	0.0251	0.132	7.64	.0004	35	40	271

STATISTICAL PROFILE: AFRICA (Continued)

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density (sq m) (sq k)		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							Oil	Gas						Export	Import		
Mozambique	9.7	275	Portuguese	NA	7	Escudo	31	12	1.6	169	0.0148	0.0476	5.14	—	—	50	30
Niger	4.9	124	French	NA	6	CFA Franc	9.8	3.8	0.74	157	—	0.00452	0.97	—	—	Z	37
Nigeria	66.6	363	English	NA	25	Naira	216	83	29.3	381	3.642	0.1568	2.08	96.86	41.0	8,162	623
Rhodesia	6.7	474	English	19/81	27	Dollar	43	17	3.6	545	0.115	0.1339	20.87	NA	NA	Z	1
Rwanda	4.4	151	French	4/96	23	Franc	422	163	0.48	112	0.0005	0.00158	0.39	NA	NA	41	6
Senegal	3.9	333	French	32/68	10	CFA Franc	67	26	2.0	389	—	0.0224	4.59	—	—	5	32
Somalia	3.4	151	Somali	20/80	5	Shilling	13	5.1	0.37	113	—	0.00314	1.00	NA	NA	Z	32
So. Africa	22.5	1,174	Afrikaans	48/52	35	Rand	55	21	34.9	1,334	1.934	2.34	81.54	—	—	2,617	1,413
Sudan	17.0	274	Arabic	20/80	19	Pound	16	6.2	4.6	298	0.000416	0.0688	4.64	—	—	16	103
Tanzania	16.1	203	Swahili	7/93	18	Shilling	43	17	2.7	178	0.00116	0.0292	1.92	—	—	46	36
Tunisia	6.1	756	Arabic/ French	NA	32	Dinar	91	35	4.8	835	0.197	0.0716	12.84	9.58	5.6	95	175
Zaire	26.3	127	French	30/70	10	Zaire	28	11	3.5	137	0.0179	0.0542	2.17	0.754	0.05	286	113
Zambia	5.3	441	English	36/64	40	Kwacha	18	6.8	2.2	428	0.0429	0.0686	14.01	—	—	121	68

INSOLATION: AFRICA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Algeria												
Algiers	185	237	392	426	470	553	545	456	405	263	185	145
Tamanrasset	437	508	589	639	656	636	654	606	517	480	427	394
Burundi ^b												
Kisozi	438	434	445	467	465	471	469	454	491	461	429	424
Central African Empire												
Bangui	388	445	501	489	469	411	384	3999	438	454	400	375
Chad												
Fort Lamy	504	568	628	601	600	578	539	498	548	577	551	507
Egypt ^b												
Cairo	290	375	498	576	635	667	663	610	533	420	319	266
Ethiopia												
	—	—	—	—	—	—	—	—	—	—	—	—
Guinea Bissau												
Bissau	452	506	613	644	608	515	467	376	436	493	451	432
Ivory Coast												
	—	—	—	—	—	—	—	—	—	—	—	—
Kenya												
Nairobi	558	595	559	486	416	397	324	366	464	492	486	522
Liberia												
	—	—	—	—	—	—	—	—	—	—	—	—
Libya												
	—	—	—	—	—	—	—	—	—	—	—	—
Mali												
Gao	440	470	510	550	550	520	530	520	510	480	450	400

^aInsolation: Langleys per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

^bWorld Survey of Climatology; Volume 10.

^cSolar Radiation and Radiation Balance Data (The World Network).

INSOLATION: AFRICA^a (Continued)

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Madagascar												
Tananarive	514	512	490	416	406	365	331	472	562	619	624	580
Mauritania												
Nema	430	480	520	540	540	490	520	520	500	470	400	397
Nouakchott	490	530	620	670	660	660	620	610	580	540	430	440
Morocco	—	—	—	—	—	—	—	—	—	—	—	—
Mozambique												
Beira	560	490	546	482	394	387	383	466	484	520	574	528
Niger												
Bilma	440	510	520	580	590	610	560	600	550	530	480	420
Niamey	500	584	623	604	600	585	546	505	544	574	543	521
Nigeria												
Enugu	400	430	410	440	430	480	340	330	370	390	420	420
Jos	490	520	510	500	470	460	420	410	440	480	510	490
Rhodesia												
Bulawayo	548	512	540	497	445	396	423	491	540	562	540	501
Rwanda												
Rubona	460	470	481	453	463	454	449	471	490	475	469	460
Senegal												
Dakar	395	461	539	567	556	539	456	382	415	417	491	364
Somalia^b												
Mogadiscio	606	615	613	581	558	492	503	567	613	615	588	570

^aInsolation: Langleys per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

^bWorld Survey of Climatology; Volume 10.

^cSolar Radiation and Radiation Balance Data (The World Network).

INSOLATION: AFRICA^a (Concluded)

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
South Africa												
Capetown	731	634	525	367	242	230	241	308	439	551	674	728
Pietersburg	617	564	524	460	412	374	357	434	483	566	621	590
Pretoria	582	528	491	420	363	343	356	440	493	538	576	565
Sudan^b												
Wadi Halfa	483	557	612	648	622	589	571	563	562	522	488	455
Malakai	471	521	527	536	510	448	448	486	484	487	487	477
Tanzania^c												
Dar-Es-Salaam	468	478	402	336	365	374	463	396	416	469	471	470
	500	468	451	449	472	487	498	503	502	506	475	457
Tunisia												
Tunis-El-Aouina	244	308	385	525	640	645	682	617	—	321	251	202
Zaire												
Luluabourg	440	414	461	450	474	409	401	413	472	471	464	434
Yamgambi	409	450	458	446	438	396	352	361	458	410	423	373

^aInsolation: langleys per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

^bWorld Survey of Climatology; Volume 10.

^cSolar Radiation and Radiation Balance Data (The World Network).

STATISTICAL PROFILE: ALGERIA

Population (millions):	17.9	GNP (US\$ billions):	16.1
Per capita income (US\$):	876	GNP per capita (US\$):	928
Primary language:	Arabic	Energy production (quad Btu) ^a :	2.316
Urban/rural (%):	52/48	Gross energy consumption ^a	
Literacy rate (%):	26	(quad Btu):	0.3517
Monetary unit:	Dinar	Consumption per capita (MBtu) ^b	20.95
Population density		Energy Reserves:	
per sq. mile:	20	Oil ^c :	47.56
per sq. kilometer:	7.5	Gas ^c :	131.5
		Trade with U.S.	
		From U.S. Imports:	404
		To U.S. Exports:	4,940

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Algiers:												
Lat.: 36° 46' N												
Long.: 03° 03' E												
Insolation	185	237	392	426	470	553	545	456	405	263	185	145
Temperature	12.0	12.5	14.0	16.5	19.0	22.5	24.5	25.5	24.0	20.0	16.0	13.5
Tamanrasset:												
Lat.: 22° 42' N												
Long.: 05° 31' E												
Insolation	437	508	589	639	656	636	654	606	517	480	427	394
Temperature	11.5	14.0	17.5	21.5	25.0	28.0	28.5	27.5	26.0	22.0	18.5	13.5

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Algeria: 2118 Kalorama Rd., NW
Washington, D.C. 20008
U.S.: 4 Chemin Cheikh Bachir
Brahimi
Algiers, Algeria
Tel: 601425, 601255, 601186,
601716, 601828, 603670
Telex: 52064

Chambers of Commerce:

Chambre Francaise de Commerce et
d'Industrie en Algerie
1 rue du Languedoc
Algiers, Algeria

Trade Fairs:

Foire Internationale d'Alger
Palais des Expositions
Pins Maritimes
BP 571
Algiers, Algeria
(annual)

STATISTICAL PROFILE: BURUNDI

Population (millions):	4.0	GNP (US\$ billions):	0.46
Per capita income (US\$):	69	GNP per capita (US\$):	119
Primary language:	French	Energy production (quad Btu) ^a :	—
Urban/rural (%):	2/98	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.00133
Monetary unit:	Franc	Consumption per capita (MBtu) ^b	0.36
Population density		Energy Reserves:	
per sq. mile:	360	Oil ^c :	NA
per sq. kilometer:	139	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	3
		To U.S. Exports:	371

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kisozi:												
Lat.: 03° 33' S												
Long.: 29° 41' E												
Insolation	438	434	445	467	465	471	469	454	481	461	429	424
Temperature	17.0	17.0	17.0	17.0	16.0	15.0	15.5	16.5	17.0	17.0	17.0	17.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Burundi: 2717 Connecticut Ave., NW
Washington, D.C. 20009
U.S.: Chaussee Prince Louise
Rwagasore
Boite Postale 1720
Bujumbura, Burundi
Tel: 34-54

Chambers of Commerce:

Chambre de Commerce de l'Industrie due
Rwanda et du Burundi
POB 313
Bujumbura, Burundi

STATISTICAL PROFILE: CENTRAL AFRICAN EMPIRE

Population (millions):	NA	GNP (US\$ billions):	0.42
Per capita income (US\$):	205	GNP per capita (US\$):	53
Primary language:	French	Energy production (quad Btu) ^a :	0.000166
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	12	(quad Btu):	0.00169
Monetary unit:	Franc	Consumption per capita (MBtu) ^b :	0.64
Population density		Energy Reserves:	
per sq. mile:	11	Oil ^c :	NA
per sq. kilometer:	4.4	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	1.0
		To U.S. Exports:	5.0

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Bagui:												
Lat.: 04° 22' N												
Long.: 18° 34' E												
Insolation	388	445	501	489	469	411	384	399	438	454	400	375
Temperature	26.5	27.0	27.0	27.0	26.5	26.0	24.5	25.0	25.5	25.5	25.5	25.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Central African
 Empire: 1618 22nd St., NW
 Washington, D.C. 20008
 U.S.: Place de la Republique
 BP 924
 Bangui, Central African
 Empire
 Tel: 610-200, 610-205
 Telex: 5216

Chambers of Commerce:
 Chambre Nationale de Commerce
 BP 813
 Bangui, Central African Empire

STATISTICAL PROFILE: CHAD

Population (millions):	4.1	GNP (US\$ billions):	0.51
Per capita income (US\$):	165	GNP per capita (US\$):	124
Primary language:	French	Energy production (quad Btu) ^a :	—
Urban/rural (%):	14/86	Gross energy consumption ^a	
Literacy rate (%):	7	(quad Btu):	0.00439
Monetary unit:	Franc	Consumption per capita (MBtu) ^b	1.08
Population density		Energy Reserves:	
per sq. mile:	9.0	Oil ^c :	NA
per sq. kilometer:	3.5	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	3
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Fort Lamy:												
Lat.: 12° 03' N												
Long.: 15° 02' E												
Insolation	504	568	628	601	600	578	539	498	548	577	551	507
Temperature	22.2	25.9	29.7	32.7	31.5	29.0	26.5	26.2	26.4	28.3	25.1	23.2

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = Less than \$500,000.

Embassies:

Chad: 2600 Virginia Ave., NW
Washington, D.C 20037

U.S.: Rue due St. Col. Colonna
D'Oranano
B.P. 413
N'Djamena, Chad
Tel: 30-91/2/3/4
Telex: 5203 KD

Trade and Solar Interest Organizations:

Societe Nationale de Commercialisation du
Tchad (SONACOT)
B.P. 630
N'Djamena, Chad
(State owned, national marketing, distribu-
tion and export-import company.)

Chambers of Commerce:

Chambre de Commerce, d'Agriculture et
d'Industrie de la Republique du Tchad
B.P. 458
N'Djamena, Chad

STATISTICAL PROFILE: EGYPT

Population (millions):	38.7	GNP (US\$ billions):	10.5
Per capita income (US\$):	448	GNP per capita (US\$):	275
Primary language:	Arabic	Energy production (quad Btu) ^a :	0.369
Urban/rural (%):	44/56	Gross energy consumption ^a	
Literacy rate (%):	40	(quad Btu):	0.419
Monetary unit:	Pound	Consumption per capita (MBtu) ^b :	11.25
Population density		Energy Reserves:	
per sq. mile:	99	Oil ^c :	16.82
per sq. kilometer:	38	Gas ^c :	2.97
		Trade with U.S.	
		From U.S. Imports:	1,433
		To U.S. Exports:	381

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Cairo:												
Lat.: 30° 08' N												
Long.: 31° 34' E												
Insolation	290	375	498	576	635	667	663	610	533	420	319	266
Temperature	14.0	15.0	17.5	21.0	25.5	27.5	28.5	28.5	26.0	24.0	20.0	15.5

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Egypt: 2310 Decatur Place, NW
Washington, D.C. 20008
U.S.: 5 Sharia Latin America
Cairo, Egypt
Tel: 28211/9
Telex: 93773

Chambers of Commerce:

Egyptian Chamber of Commerce
El-Ghorfa Eltegrein St.
Alexandria, Egypt

STATISTICAL PROFILE: ETHIOPIA

Population (millions):	29.0	GNP (US\$ billions):	2.9
Per capita income (US\$):	91	GNP per capita (US\$):	103
Primary language:	Amharic	Energy production (quad Btu) ^a :	0.00119
Urban/rural (%):	12/88	Gross energy consumption ^a	
Literacy rate (%):	7	(quad Btu):	0.0222
Monetary unit:	Birr	Consumption per capita (MBtu) ^b :	0.81
Population density		Energy Reserves:	
per sq. mile:	61	Oil ^c :	—
per sq. kilometer:	23	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	104
		To U.S. Exports:	109

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Addis Ababa:												
Lat.: 09° 02' N												
Long.: 38° 45' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	14.5	15.5	17.0	17.5	17.0	16.5	15.5	15.5	15.5	14.5	13.0	13.5
Dire Dawa:												
Lat.: 09° 02' N												
Long.: 41° 45' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	22.0	23.0	25.0	25.0	27.0	27.5	25.5	24.0	24.5	25.0	23.5	21.5

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Ethiopia: 2134 Kalorama Rd., NW
Washington, D.C. 20008
Vacant (AMB)

U.S.: Entoto Street
P.O. Box 1014
Addis Ababa, Ethiopia
Tel: 110666, 110117, 110129

Chambers of Commerce:

Ethiopian Chamber of Commerce
POB 517
Addis Ababa, Ethiopia

STATISTICAL PROFILE: GUINEA BISSAU

Population (millions):	0.54	GNP (US\$ billions):	0.07
Per capita income (US\$):	318	GNP per capita (US\$):	131
Primary language:	Portuguese	Energy production (quad Btu) ^a :	—
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	NA	(quad Btu):	0.00119
Monetary unit:	Escudo	Consumption per capita (MBtu) ^b	2.23
Population density		Energy Reserves:	
per sq. mile:	38	Oil ^c :	NA
per sq. kilometer:	15	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	NA
		To U.S. Exports:	NA

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Bissau:												
Lat.: 11° 52' N												
Long.: 15° 30' W												
Insolation	452	506	613	644	608	515	467	376	486	493	451	432
Temperature	—	—	—	—	—	—	—	—	—	—	—	—

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Guinea Bissau: 211 East 43rd St.
New York, NY 10017
Ibrahima Camare (AMB)

U.S.: Avenida Domingos
Ramos
C.P. 297
Bissau, Guinea Bissau
Tel: 28-6/7

Chambers of Commerce:

Since independence the government has been actively pursuing a policy of small-scale industrialization to compensate for the almost total lack of manufacturing capacity. No Chamber of Commerce presently.

STATISTICAL PROFILE: IVORY COAST

<p>Population (millions): 5.2 Per capita income (US\$): 1,150 Primary language: French 44 Urban/rural (%): 32/68 Literacy rate (%): 20 Monetary unit: CFA Franc Population density per sq. mile: 56 per sq. kilometer: 22</p>	<p>GNP (US\$ billions): 4.3 GNP per capita (US\$): 609 Energy production (quad Btu)^a: 0.0009 Gross energy consumption^a (quad Btu): 0.0497 Consumption per capita (MBtu)^b: 7.45 Energy Reserves: Oil^c: 0.29 Gas^c: — Trade with U.S. From U.S. Imports: 128 To U.S. Exports: 363</p>
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City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Abidjan:												
Lat.: 05° 15' N												
Long.: 03° 56' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	27.0	28.0	28.0	28.0	27.5	26.0	25.5	25.0	25.5	26.0	27.0	27.0
Ferkessedougou:												
Lat.: 09° 37' N												
Long.: 05° 37' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	25.0	27.5	29.0	28.5	28.0	26.5	25.0	25.0	25.5	26.0	26.5	25.0

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Ivory Coast: 2424 Massachusetts Ave.,
 NW
 Washington, D.C. 20008
 U.S.: Rue Jesse Owens
 01 Boite Postale 1712
 Abidjan, Ivory Coast
 Monteagle Stearns (AMB)
 Tel: 32-46-30
 Telex: 660

Chambers of Commerce:

Chambre de Commerce de la Republique
 de Cote d'Ivoire
 BP 1399
 Abidjan, Ivory Coast

Development Organizations:

Societe de Gestion Financiere de l'Habitat
 (SOGEFIHA)
 BP 9278
 Abidjan, Ivory Coast
 (Development of urban and rural housing).

STATISTICAL PROFILE: KENYA

Population (millions):	14.3	GNP (US\$ billions):	3.3
Per capita income (US\$):	276	GNP per capita (US\$):	237
Primary language:	Swahili	Energy production (quad Btu) ^a :	0.00222
Urban/rural (%):	10/90	Gross energy consumption ^a	
Literacy rate (%):	25	(quad Btu):	0.0646
Monetary unit:	Shilling	Consumption per capita (MBtu) ^b	4.84
Population density		Energy Reserves:	
per sq. mile:	62	Oil ^c :	—
per sq. kilometer:	24	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	61
		To U.S. Exports:	50

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Nairobi:												
Lat.: 01° 18' S												
Long.: 36° 04' E												
Insolation	558	595	559	486	416	397	324	366	464	492	486	522
Temperature	18.0	18.5	19.0	19.0	18.0	16.5	15.0	16.0	17.0	18.5	18.0	17.5

quad = quadrillion (10^{15}).

Insolation: langleys (1 langley = 1 cal/cm^2).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Kenya: 2249 R St., NW
Washington, D.C. 20008
John P. Mbogua (AMB)

U.S.: Cotts House
Wabera Street
P. O. Box 30137
Nairobi, Kenya
Jack Felt (COM)
Tel: 334141

Chambers of Commerce:

Kenya National Chamber of Commerce
and Industry
Ufanisi House
Haile Selassie Ave.
POB 47124
Nairobi, Kenya

STATISTICAL PROFILE: LIBERIA

Population (millions):	1.7	GNP (US\$ billions):	0.72
Per capita income (US\$):	422	GNP per capita (US\$):	450
Primary language:	English	Energy production (quad Btu) ^a :	0.00108
Urban/rural (%):	28/92	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.0191
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b :	12.37
Population density		Energy Reserves:	
per sq. mile:	37	Oil ^c :	—
per sq. kilometer:	14	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	108
		To U.S. Exports:	136

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Monrovia:												
Lat.: 06° 18' N												
Long.: 10° 45' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	26.0	26.5	27.0	26.5	25.5	25.5	24.5	25.0	25.0	25.5	26.0	26.0

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Liberia: 5201 16th St., NW
 Washington, D.C. 20011
 Francis A. W. Dennis (AMB)
 U.S.: APO New York 09155
 111 United Nations Drive
 P. O. Box 98
 Monrovia, Liberia
 (COM)
 Tel: 22991, 22992-3-4

Chambers of Commerce:
 Liberia Chamber of Commerce
 POB 92
 Manrovia, Liberia

STATISTICAL PROFILE: LIBYA

Population (millions):	1.9	GNP (US\$ billions):	16.0
Per capita income (US\$):	6,451	GNP per capita (US\$):	6,324
Primary language:	Arabic	Energy production (quad Btu) ^a :	3.102
Urban/rural (%):	30/70	Gross energy consumption ^a	
Literacy rate (%):	30	(quad Btu):	0.0882
Monetary unit:	Dinar	Consumption per capita (MBtu) ^b :	36.15
Population density		Energy Reserves:	
per sq. mile:	3.5	Oil ^c :	133.4
per sq. kilometer:	1.3	Gas ^c :	23.8
		Trade with U.S.	
		From U.S. Imports:	468
		To U.S. Exports:	5,256

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kufra:												
Lat.: 24° 13' N												
Long.: 23° 20' E												
Insolation												
Temperature	13.0	15.0	18.5	24.0	28.5	30.5	30.5	30.5	28.5	24.0	19.0	14.0
Tripoli:												
Lat.: 32° 13' N												
Long.: 13° 11' E												
Insolation												
Temperature	12.5	13.5	15.0	18.0	20.5	24.0	25.5	26.5	25.5	23.0	18.0	13.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Libya: 2344 Massachusetts Ave., NW
 Washington, D.C. 20008
 U.S.: Shari Mohammad Thabit
 P. O. Box 289
 Tripoli, Libya
 Tel: 34021/6

Chambers of Commerce:

Tripolitania Chamber of Commerce, Industry and Agriculture
 Al-Jomhourieh St.
 POB 2321
 Tripoli, Libya

Trade Fairs:

Tripoli International Fair
 POB 891
 Tripoli
 Annual Fair March 1-20

STATISTICAL PROFILE: MALI

Population (millions):	6.0	GNP (US\$ billions):	0.59
Per capita income (US\$):	96	GNP per capita (US\$):	98
Primary language:	French	Energy production (quad Btu) ^a :	0.000111
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.00391
Monetary unit:	Franc	Consumption per capita (MBtu) ^b :	0.67
Population density		Energy Reserves:	
per sq. mile:	13	Oil ^c :	NA
per sq. kilometer:	49	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	61
		To U.S. Exports:	69

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Gao:												
Lat.: 16° 16' N												
Long.: 00° 03' W												
Insolation	440	470	510	550	550	520	530	520	510	480	450	400
Temperature	21.0	25.0	29.0	33.0	34.0	33.5	31.5	29.5	31.5	32.0	27.5	24.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

STATISTICAL PROFILE: MADAGASCAR

Population (millions):	8.5	GNP (US\$ billions):	1.9
Per capita income (US\$):	230	GNP per capita (US\$):	244
Primary language:	Malagasy	Energy production (quad Btu) ^a :	0.000583
Urban/rural (%):	14/86	Gross energy consumption ^a	
Literacy rate (%):	39	(quad Btu):	0.0149
Monetary unit:	Franc	Consumption per capita (MBtu) ^b	2.0
Population density		Energy Reserves:	
per sq. mile:	34	Oil ^c :	—
per sq. kilometer:	13	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	7
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Tananarive:												
Lat.: 18° 54' S												
Long.: 47° 32' E												
Insolation	514	512	490	466	406	365	381	472	562	619	624	580
Temperature	20.5	21.0	20.5	19.5	17.0	15.5	15.0	15.0	16.5	18.5	20.5	20.5

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = Less than \$500,000.

Embassies:

Madagascar: 2374 Massachusetts Ave.,
NW
Washington, D. C. 20008
U.S.: 14 and 16 rue Rainitovo,
Antsohavola
Boite Postale 620
Antananarivo, Madagascar
Tel: 212-57
Telex: TANA 22202

Chambers of Commerce:

Federacion des Chambres de Commerce,
d'Industrie et d'Argiculture de
Madagascar
BP 166
20 rue Colbert
Antananarivo, Madagascar

Trade and Solar Interest Organizations:

Societe Nationale de Commerce
(SONACO)
BP 3187
Antananarivo, Madagascar
(handles all imports and exports)

STATISTICAL PROFILE: MAURITANIA

Population (millions):	1.2	GNP (US\$ billions):	0.46
Per capita income (US\$):	240	GNP per capita (US\$):	311
Primary language:	French	Energy production (quad Btu) ^a :	—
Urban/rural (%):	23/77	Gross energy consumption ^a	
Literacy rate (%):	5	(quad Btu):	0.00397
Monetary unit:	Ouguiya	Consumption per capita (MBtu) ^b :	3.0
Population density		Energy Reserves:	
per sq. mile:	3.7	Oil ^c :	NA
per sq. kilometer:	1.4	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	7
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Nema:												
Lat.: 16° 36' N												
Long.: 07° 16' W												
Insolation	430	480	520	540	540	490	520	520	500	470	400	370
Temperature	23.5	26.0	30.0	33.0	35.5	35.0	32.0	29.5	31.0	32.5	29.5	24.5
Nouakchott:												
Lat.: 18° 09' N												
Long.: 15° 36' W												
Insolation	490	530	620	670	660	660	620	610	580	540	470	440
Temperature	21.0	22.0	24.5	25.5	27.5	28.0	28.0	28.0	29.0	28.5	25.5	21.5

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversation of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = Less than \$500,000.

Embassies:

Mauritania: 2129 Leroy Place, NW
 Washington, D.C. 20008
 U.S.: Boite Postale 222
 Nouakchott, Mauritania
 Tel: 52660/52663
 Telex: AMEMB 558 MTN

Chambers of Commerce:

Chambre de Commerce, d'Agriculture et
 d'Industrie de la Republique Islamique de
 Mauritanie
 BP 215
 Nouakchott, Mauritania

STATISTICAL PROFILE: MOROCCO

Population (millions):	18.2	GNP (US\$ billions):	9.2
Per capita income (US\$):	440	GNP per capita (US\$):	517
Primary language:	Arabic	Energy production (quad Btu) ^a :	0.0251
Urban/rural (%):	32/68	Gross energy consumption ^a	
Literacy rate (%):	20	(quad Btu):	0.132
Monetary unit:	Dirham	Consumption per capita (MBtu) ^b :	7.64
Population density		Energy Reserves:	
per sq. mile:	10	Oil ^c :	0.000435
per sq. kilometer:	39	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	271
		To U.S. Exports:	40

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Marrakesh:												
Lat.: 31° 36' N												
Long.: 08° 01' W												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	12.5	14.0	16.0	18.0	21.5	24.0	28.0	28.0	25.0	21.0	15.5	12.5

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Morocco: 1601 21st St., NW
Washington, D.C. 20009
U.S.: 2 Avenue de Marrakech
Box 99
Rabat, Morocco
Tel: 30361, 30362
Telex: 31005

Chambers of Commerce:

Le Federacion des Chambres de Commerce
et d'Industrie du Maroc
BP 218
11 rue Allal Ben Abdullah
Rabat, Morocco

Trade Fairs:

Foire Internationale de Casablanca
11 rue Jules Mauran
Casablanca, Morocco

STATISTICAL PROFILE: MOZAMBIQUE

Population (millions):	9.7	GNP (US\$ billions):	1.6
Per capita income (US\$):	275	GNP per capita (US\$):	169
Primary language:	Portuguese	Energy production (quad Btu) ^a :	0.0148
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	7	(quad Btu):	0.0476
Monetary unit:	Escudo	Consumption per capita (MBtu) ^b	5.14
Population density		Energy Reserves:	
per sq. mile:	31	Oil ^c :	—
per sq. kilometer:	12	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	30
		To U.S. Exports:	50

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Beira:												
Lat.: 19° 08' S												
Long.: 34° 08' E												
Insolation	560	490	546	482	394	387	383	466	484	520	574	528
Temperature	28.5	28.0	28.0	26.0	23.5	21.5	20.5	21.5	23.5	27.0	26.0	27.0

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Mozambique: No U.S. Diplomatic Representation
 U.S.: 35 Rue Da Mesquita
 3rd FL.
 P. O. box 783
 Maputo, Mozambique
 Tel: 26051

Trade and Solar Interest Organizations:
 Direccao Nacional de Comercio Externo
 Praca 25 de Junho
 Maputo, Mozambique
 (national board of external trade)
 Empresa Nacional de Comercializacao
 (ENACOMO)
 C.P. 1831
 Maputo, Mozambique
 (handles all of Mozambique's foreign trade)

STATISTICAL PROFILE: NIGER

Population (millions):	4.9	GNP (US\$ billions):	0.74
Per capita income (US\$):	124	GNP per capita (US\$):	157
Primary language:	French	Energy production (quad Btu) ^a :	—
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	6	(quad Btu):	0.00452
Monetary unit:	CFA Franc	Consumption per capita (MBtu) ^b	0.97
Population density		Energy Reserves:	
per sq. mile:	9.8	Oil ^c :	—
per sq. kilometer:	3.8	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	37
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Bilma:												
Lat.: 18° 39' N												
Long.: 13° 23' E												
Insolation	440	510	520	580	590	610	560	600	550	530	480	420
Temperature	17.0	19.5	24.0	27.5	31.5	33.0	32.5	31.5	31.0	27.0	22.0	17.5
Niamey:												
Lat.: 13° 30' N												
Long.: 02° 07' E												
Insolation	500	584	623	604	600	585	540	505	544	574	543	521
Temperature	24.0	27.0	31.0	33.5	34.0	31.5	28.5	27.5	28.5	30.5	28.0	25.5

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversation of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = Less than \$500,000.

Embassies:

Niger: 2204 R St., NW
Washington, D.C. 20008
U.S.: Boite Postale 11201
Niamey, Niger
Tel: 72-26-61

Chambers of Commerce:

Chambre de Commerce d'Agriculture et
d'Industrie du Niger
BP 209
Niamey, Niger

Development Organizations:

Office National de L'Energie Solaire
BP 614
Niamey, Niger
(government office for building and commercial exploitation of solar powered machinery)

STATISTICAL PROFILE: NIGERIA

Population (millions):	66.6	GNP (US\$ billions):	29.3
Per capita income (US\$):	363	GNP per capita (US\$):	381
Primary language:	English	Energy production (quad Btu) ^a :	3.642
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	25	(quad Btu):	0.1568
Monetary unit:	Naira	Consumption per capita (MBtu) ^b	2.08
Population density		Energy Reserves:	
per sq. mile:	216	Oil ^c :	96.86
per sq. kilometer:	83	Gas ^c :	41.0
		Trade with U.S.	
		From U.S. Imports:	632
		To U.S. Exports:	8,162

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Enugu:												
Lat.: 06° 28' N												
Long.: 07° 33' E												
Insolation	400	430	410	440	430	480	340	330	370	390	420	420
Temperature	27.0	28.0	28.5	28.0	27.0	25.5	25.0	24.5	25.5	26.5	27.0	26.5
Jos:												
Lat.: 09° 52' N												
Long.: 08° 54' E												
Insolation	490	520	510	500	470	460	420	410	440	480	510	490
Temperature	21.0	22.0	24.5	24.0	23.0	21.5	20.5	20.5	21.5	21.5	21.5	20.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Nigeria: 2201 M St., NW
 Washington, D.C. 20037
 U.S.: 15 Eleke Crescent
 P. O. Box 554
 Lagos, Nigeria
 Tel: 610097

Chambers of Commerce:

African Chamber of Commerce
 73 Oluwole St.
 POB 2189
 Lagos, Nigeria
 The Nigerian Association of Chambers of
 Commerce, Industry and Agriculture
 POB 109
 Lagos, Nigeria

STATISTICAL PROFILE: NIGERIA (Concluded)**Trade and Solar Interest Organizations:**

Federation of Building and Civil Engineer-
ing Contractors in Nigeria
34 McCarthy St.
P. O. Box 282
Lagos, Nigeria

Nigerian Association of African Importers
and Exporters
33 Kosoko St.
Lagos, Nigeria

STATISTICAL PROFILE: RHODESIA

Population (millions):	6.7	GNP (US\$ billions):	3.6
Per capita income (US\$):	474	GNP per capita (US\$):	545
Primary language:	English	Energy production (quad Btu) ^a :	0.115
Urban/rural (%):	19/81	Gross energy consumption ^a	
Literacy rate (%):	27	(quad Btu):	0.1339
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b :	20.87
Population density		Energy Reserves:	
per sq. mile:	43	Oil ^c :	NA
per sq. kilometer:	17	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	1
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Builawayo:												
Lat.: 20° 09' S												
Long.: 28° 37' E												
Insolation	548	512	540	497	445	396	423	491	540	562	540	501
Temperature	21.5	21.5	20.5	19.5	17.0	14.0	14.0	15.5	19.5	22.5	22.0	21.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.
 *Z = Less than \$500,000.

Embassies:
 Rhodesia: } No diplomatic relations
 U.S.: }

Chambers of Commerce:
 Associated Chambers of Commerce of
 Rhodesia
 Equity House, Rezende Street
 POB 1934
 Salisbury, Rhodesia

Trade and Solar and Interest Organizations:
 Building Industry's Federation of Rhodesia
 P. O. Box 3794
 Salisbury, Rhodesia

Trade Fairs:
 Trade Fair of Rhodesia
 P. O. Famona 1
 Bulawayo, Rhodesia

STATISTICAL PROFILE: RWANDA

Population (millions):	4.4	GNP (US\$ billions):	0.48
Per capita income (US\$):	151	GNP per capita (US\$):	112
Primary language:	French	Energy production (quad Btu) ^a :	0.0005
Urban/rural (%):	4/96	Gross energy consumption ^a	
Literacy rate (%):	23	(quad Btu):	0.00158
Monetary unit:	Franc	Consumption per capita (MBtu) ^b :	0.39
Population density		Energy Reserves:	
per sq. mile:	422	Oil ^c :	NA
per sq. kilometer:	163	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	6
		To U.S. Exports:	41

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Rubona:												
Lat.: 02° 29' S												
Long.: 29° 46' E												
Insolation	460	470	481	453	463	454	449	471	490	475	469	460
Temperature	19.5	19.0	19.5	19.5	19.0	18.5	19.0	20.0	20.5	20.0	19.5	19.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversation of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:

Rwanda: 1714 New Hampshire Ave., NW
 Washington, D.C. 20008
 Bonaventure Ubalijoro (AMB)
 U.S.: Ave. Centrale
 B.P. 28
 Kigali, Rwanda
 Tel: 5601
 Telex: 16 AMEMB RW

Chambers of Commerce:

Chambre de Commerce et d'Industrie du
 Rwanda
 BP 319
 Kigali, Rwanda

STATISTICAL PROFILE: SENEGAL

Population (millions):	3.9	GNP (US\$ billions):	2.0
Per capita income (US\$):	333	GNP per capita (US\$):	389
Primary language:	French	Energy production (quad Btu) ^a :	—
Urban/rural (%):	32/68	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.0224
Monetary unit:	CFA Franc	Consumption per capita (MBtu) ^b	4.59
Population density		Energy Reserves:	
per sq. mile:	67	Oil ^c :	—
per sq. kilometer:	26	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	32
		To U.S. Exports:	5

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Dakar:												
Lat.: 13° 48' S												
Long.: 172° 00' W												
Insolation	395	461	539	567	556	539	456	382	415	417	401	364
Temperature	22.0	21.0	22.0	21.0	22.0	25.5	27.0	27.5	28.0	27.5	24.5	22.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Senegal: 2112 Wyoming Ave., NW
 Washington, D.C. 20008
 U.S.: Boite Postale 49
 Avenue Jean XXIII
 Dakar, Senegal
 Tel: 21-42-96
 Telex: 517 AMEMB SG

Chambers of Commerce:

Chambre de Commerce, d'Industrie et
 d'Artissant de al Region du Cap Verf
 BP 118
 Dakar

Trade Fairs:

Foire Internationale de Dakar
 Sofidak
 Route de Yoff
 BP 3329
 Dakar

STATISTICAL PROFILE: SOMALIA

Population (millions):	3.4	GNP (US\$ billions):	0.37
Per capita income (US\$):	151	GNP per capita (US\$):	113
Primary language:	Somali	Energy production (quad Btu) ^a :	—
Urban/rural (%):	20/80	Gross energy consumption ^a	
Literacy rate (%):	5	(quad Btu):	0.00314
Monetary unit:	Shilling	Consumption per capita (MBtu) ^b	1.00
Population density		Energy Reserves:	
per sq. mile:	13	Oil ^c :	NA
per sq. kilometer:	5.1	Gas ^c :	NA
		Trade with U.S.	
		From U.S. Imports:	32
		To U.S. Exports:	Z*

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Mogadiscio:												
Lat.: 02° 02' N												
Long.: 45° 21' E												
Insolation	606	615	613	581	558	492	503	567	613	615	588	570
Temperature	26.5	26.5	28.0	29.0	28.0	27.0	26.0	26.0	26.0	27.0	27.5	27.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

*Z = Less than \$500,000.

Embassies:

Somalia: 600 New Hampshire Ave., NW
Suite 710
Washington, D.C. 20037
Tel: (202) 234-3261

U.S.: Corso Primo Luglio
Mogadiscio, Somalia
Tel: 2811

Chambers of Commerce:

Chamber of Commerce, Industry and
Agriculture
POB 27
Via Asha, Somalia

STATISTICAL PROFILE: SOUTH AFRICA

Population (millions):	22.5	GNP (US\$ billions):	34.9
Per capita income (US\$):	1,174	GNP per capita (US\$):	1,334
Primary language:	Afrikaans	Energy production (quad Btu) ^a :	1.934
Urban/rural (%):	48/52	Gross energy consumption ^a	
Literacy rate (%):	35	(quad Btu):	2.34
Monetary unit:	Rand	Consumption per capita (MBtu) ^b	81.54
Population density		Energy Reserves:	
per sq. mile:	55	Oil ^c :	—
per sq. kilometer:	21	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	1,413
		To U.S. Exports:	2,617

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Capetown:												
Lat.: 33° 54' S												
Long.: 18° 32' E												
Insolation	731	634	525	367	242	230	241	308	439	551	674	728
Temperature	21.0	21.0	19.5	17.0	14.5	13.0	12.0	13.0	14.0	16.5	23.0	20.0
Pietersburg:												
Lat.: 23° 52' S												
Long.: 29° 27' E												
Insolation	617	564	524	460	412	374	357	434	483	566	621	590
Temperature	21.5	21.5	20.5	18.5	15.0	12.0	12.0	14.0	17.5	20.5	21.0	21.5
Pretoria:												
Lat.: 26° 15' S												
Long.: 28° 09' E												
Insolation	582	528	491	420	363	343	356	440	493	538	576	565
Temperature	20.0	19.5	18.5	16.0	12.5	10.5	10.5	13.0	16.0	18.5	19.0	20.0

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

South Africa: 3051 Massachusetts Ave.,
NW
Washington, D.C. 20008

U.S.: Thibault House
225 Pretorious Street
Pretoria, South Africa

Embassies (Contd.):

Tel: 48-4266
Telex: 3-751

STATISTICAL PROFILE: SOUTH AFRICA (Concluded)Chambers of Commerce:

Association of Chambers of Commerce
POB 694
Johannesburg 2000, South Africa

Trade and Solar Interest Organizations:

International Solar Energy Society (ISES)
Southern African Section
c/o National Building Research Institute
P.O. Box 395
Pretoria, 0001
South Africa

STATISTICAL PROFILE: SUDAN

Population (millions):	17.0	GNP (US\$ billions):	4.6
Per capita income (US\$):	274	GNP per capita (US\$):	298
Primary language:	Arabic	Energy production (quad Btu) ^a :	0.000416
Urban/rural (%):	20/80	Gross energy consumption ^a	
Literacy rate (%):	19	(quad Btu):	0.0688
Monetary unit:	Pound	Consumption per capita (MBtu) ^b :	4.64
Population density		Energy Reserves:	
per sq. mile:	16	Oil ^c :	—
per sq. kilometer:	6.2	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	103
		To U.S. Exports:	16

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Wadi Halfa:												
Lat.: 21° 50' N												
Long.: 31° 18' E												
Insolation	483	557	612	648	622	589	571	563	562	522	488	455
Temperature	16.5	18.0	22.0	26.5	31.5	32.5	32.5	33.0	31.0	28.5	23.0	18.0
Malakai:												
Lat.: 09° 33' N												
Long.: 31° 39' E												
Insolation	471	521	527	536	510	448	448	486	484	487	487	477
Temperature	27.5	28.5	30.5	31.5	29.5	27.5	26.5	26.0	27.0	28.0	28.0	26.5

quad = quadrillion (10¹⁵).
 Insolation: langley (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Sudan: 600 New Hampshire Ave., NW
 Washington, D.C. 20037
 U.S.: Gamhouria Avenue
 P.O. Box 699
 Khartoum, Sudan
 Tel: 74611 and 74700

Chambers of Commerce:

Sudan Chamber of Commerce
 POB 81
 Khartoum, Sudan

Trade and Solar Interest Organizations:

Engineering Equipment Corporation
 POB 97
 Kartoum, Sudan
 (Importer and distributor of agricultural, engineering, and electronic equipment.)

Public Corporation for Building and Construction
 POB 2110
 Khartoum, Sudan

STATISTICAL PROFILE: SUDAN (Concluded)Trade Organizations (Contd.):

Trade and Service Corporation
POB 215
Khartoum, Sudan
(Largest importer of general merchandise
and service in storage, shipping, and insur-
ance.)

Building Materials and Refractories Cor-
poration
POB 2241
Khartoum, Sudan

Development Organizations:

Sudan Development Corporation
POB 710
Khartoum, Sudan
(To promote and cofinance development
projects with special emphasis on projects
in the agricultural, agribusiness, and
industrial sectors, within the framework of
the government's overall development plan-
ning.)

STATISTICAL PROFILE: TANZANIA

Population (millions):	16.1	GNP (US\$ billions):	2.7
Per capita income (US\$):	203	GNP per capita (US\$):	178
Primary language:	Swahili	Energy production (quad Btu) ^a :	0.0 ^a 116
Urban/rural (%):	7/93	Gross energy consumption ^a	
Literacy rate (%):	18	(quad Btu):	0.0292
Monetary unit:	Shilling	Consumption per capita (MBtu) ^b	1.92
Population density		Energy Reserves:	
per sq. mile:	43	Oil ^c :	—
per sq. kilometer:	17	Gas ^c :	—
		Trade with U.S.	
		From U.S. Imports:	36
		To U.S. Exports:	46

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kigoma:												
Lat.: 04° 53' S												
Long.: 29° 38' E												
Insolation	—	—	—	—	—	—	—	—	—	—	—	—
Temperature	23.5	23.5	23.5	23.5	23.5	23	22.5	23.5	25	24.5	23.5	22.5
Dar-es-Salaam												
Lat.: 06° 50' S												
Long.: 39° 18' E												
Insolation	468	—	—	336	—	—	368	—	—	450	—	—
Temperature	27.5	28	27.5	26.5	26	24.5	24	24	24	24.5	26	27

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Tanzania: P. O. B. 9123
 National Bank of Commerce
 House (4th Floor)
 City Drive (E)
 Dar es Salaam, Tanzania
 U.S.: 2139 R. Street, NW
 Washington, D.C. 20008

Chambers of Commerce:

Tangany, Ka Assn. of Chambers of
 Commerce
 P. O. B. 41
 Dar es Salaam, Tanzania

STATISTICAL PROFILE: TUNISIA

Population (millions):	6.1	GNP (US\$ billions):	4.8
Per capita income (US\$):	756	GNP per capita (US\$):	835
Primary language:	Arabic/French	Energy production (quad Btu) ^a :	0.197
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	32	(quad Btu):	0.0716
Monetary unit:	Dinar	Consumption per capita (MBtu) ^b :	12.84
Population density		Energy Reserves:	
per sq. mile:	91	Oil ^c :	9.58
per sq. kilometer:	35	Gas ^c :	5.6
		Trade with U.S.	
		From U.S. Imports:	175
		To U.S. Exports:	95

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Tunis-El Aouina:												
Lat.: 36° 59' N												
Long.: 10° 14' E												
Insolation	244	308	385	525	640	645	682	617	—	321	251	202
Temperature	11.0	12.0	13.5	16.0	18.5	23.5	26.0	26.5	24.5	20.5	16.0	12.0

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Tunisia: 2408 Massachusetts Ave. NW
 Washington, D.C. 20008
 Tel: (202) 234-6644
 U.S.: 144 Ave. de la Liberta
 Tunis, Tunisia
 Tel: 282.566

Trade Fairs:
 International Fair in Tunis
 Mohammed V St.
 Tunis, Tunisia

STATISTICAL PROFILE: ZAIRE

Population (millions):	26.3	GNP (US\$ billions):	3.5
Per capita income (US\$):	127	GNP per capita (US\$):	137
Primary language:	French	Energy production (quad Btu) ^a :	0.0179
Urban/rural (%):	30/70	Gross energy consumption ^a	
Literacy rate (%):	10	(quad Btu):	0.0542
Monetary unit:	Zaire	Consumption per capita (MBtu) ^b :	2.17
Population density		Energy Reserves:	
per sq. mile:	28	Oil ^c :	0.754
per sq. kilometer:	11	Gas ^c :	0.05
		Trade with U.S.	
		From U.S. Imports:	113
		To U.S. Exports:	286

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Luluabourg:												
Lat.: 05° 53' S												
Long.: 22° 23' E												
Insolation	440	464	461	450	474	409	401	413	472	471	464	434
Temperature	24.5	24.5	25.0	25.0	25.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
Yamgambi:												
Lat.: 00° 49' N												
Long.: 24° 29' E												
Insolation	409	450	458	446	438	396	352	361	408	410	423	373
Temperature	25.0	25.0	25.5	25.0	25.0	25.0	24.0	24.0	24.0	24.5	24.5	24.5

quad = quadrillion (10^{15}).

Insolation: langley (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Zaire: 1800 New Hampshire Ave., NW
Washington, D.C. 20009

U.S.: 310 Avenue des Aviateurs
Kinshasa, Zaire
Tel: 25881-2-3-4-5-6
Telex: 386

Chambers of Commerce:

Chambre de Commerce, d'Industrie et
d'Agriculture
POB 358
Kisangani, Zaire

Trade Fairs:

Foire Internationale de Kinshasa
BP 1397
Kinshasa, Zaire

STATISTICAL PROFILE: ZAMBIA

Population (millions):	5.3	GNP (US\$ billions):	2.2
Per capita income (US\$):	441	GNP per capita (US\$):	428
Primary language:	English	Energy production (quad Btu) ^a :	0.0429
Urban/rural (%):	36/64	Gross energy consumption ^a	
Literacy rate (%):	40	(quad Btu):	0.0686
Monetary unit:	Kwacha	Consumption per capita (MBtu) ^b	14.01
Population density		Energy Reserves:	
per sq. mile:	18	Oil ^c :	---
per sq. kilometer:	6.8	Gas ^c :	---
		Trade with U.S.	
		From U.S. Imports:	68
		To U.S. Exports:	121

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Lusaka:												
Lat.: 15° 25' S												
Long.: 28° 19' E												
Insolation	---	---	---	---	---	---	---	---	---	---	---	---
Temperature	21.5	21.5	21	20.5	18.5	16.5	16.5	19	22	24.5	23.5	22
Kasama:												
Lat.: 10° 13' S												
Long.: 31° 08' E												
Insolation	---	---	---	---	---	---	---	---	---	---	---	---
Temperature	21	21	21	21	19.5	17	17.5	19.5	22	23.5	23	21.5

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
Zambia: 2419 Massachusetts Ave., NW
 Washington, D.C. 20008
U.S.: Cnr. of Independence & United Nations Ave.
 P. O. B. 1617
 Lusaka, Zambia

Chambers of Commerce:
 Lusaka Chamber of Commerce & Industry
 P. O. Box 844
 Lusaka, Zambia

STATISTICAL PROFILE: ASIA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
Indonesia	143.3	289	Bahasa Indonesian (Malay)	18/82	60	Rupiah	183	71	32.4	239	2.864	0.6728	5.09	55.1	23.5	3,621	982
Japan	113.7	4,293	Japanese	76/24	99	Yen	776	300	553.1	4,891	1.04	11.168	99.77	0.3016	0.5	26,243	17,579
Taiwan (Rep. of China)	16.3	NA	Mandarin Chinese	NA	88	New Taiwan Dollar	1,167	450	17.5	1,074	0.184	0.577	35.99	0.0522	0.6	5,901	961

INSOLATION: ASIA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Indonesia Djakarta	361	382	400	396	374	361	388	426	451	422	397	370
Japan Tokyo	186	226	268	306	336	297	329	331	249	198	181	166
Taiwan Taipei	186	216	261	312	381	393	400	412	341	340	296	225

^aInsolation = langley per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: INDONESIA

Population (millions):	143.3	GNP (US\$ billions):	32.4
Per capita income (US\$):	289	GNP per capita (US\$):	239
Primary language:	Bahasa Indonesian (Malay)	Energy production (quad Btu) ^a :	2.864
Urban/rural (%):	18/82	Gross energy consumption ^a (quad Btu):	0.6728
Literacy rate:	60	Consumption per capita (MBtu) ^b :	5.09
Monetary unit:	Rupiah	Energy Reserves:	
Population density		Oil ^c :	55.1
per sq. mile:	183	Gas ^c :	23.5
per sq. kilometer:	71	Trade with U.S.:	
		From U.S. Imports:	982
		To U.S. Exports:	3,621

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Djakarta:												
Lat.: 06° 11' S												
Long.: 106° 50' E												
Insolation	361	382	400	396	374	361	388	426	451	422	397	370
Temperature	26.2	26.3	26.8	27.2	27.3	27.0	26.7	27.0	27.4	27.4	27.0	26.6

quad = quadrillion (10¹⁵).

Insolation: langley (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversation of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Indonesia: 2020 Massachusetts Ave., NW
Washington, D.C. 20036
Rusmin Nurjadin (AMB)

U.S.: Medan Merdeka Selatan 5
Jakarta, Indonesia
Tel: 340001-9
Telex: 44218 AMEMB JKT

Chambers of Commerce:

Kamar Dagang dan Industri Indonesia
(KADIN)
11 Jalan Merdeka Timur
Jakarta, Indonesia

Trade and Solar Interest Organizations:

GINSI (Importers Association of Indonesia)
Wisma Nusantara
Jalan Majapahit I
Jakarta, Indonesia
POB 2744

STATISTICAL PROFILE: JAPAN

Population (millions):	113.7	GNP (US\$ billions):	553.1
Per capita income (US\$):	4,293	GNP per capita (US\$):	4,891
Primary language:	Japanese	Energy production (quad Btu) ^a :	37,437
Urban/rural (%):	76/24	Gross energy consumption ^a	
Literacy rate (%):	99	(quad Btu):	11.168
Monetary unit:	Yen	Consumption per capita (MBtu) ^b :	99.77
Population density		Energy Reserves:	
per sq. mile:	776	Oil ^c :	0.3016
per sq. kilometer:	300	Gas ^c :	0.5
		Trade with U.S.	
		From U.S. Imports:	17,579
		To U.S. Exports:	26,243

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Tokyo:												
Lat.: 35° 41' N												
Long.: 139° 46' E												
Insolation	186	226	268	306	336	297	329	331	249	198	181	166
Temperature	3.7	4.3	7.6	13.1	17.6	21.1	25.1	26.4	22.8	16.7	11.3	6.1

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Japan: 2520 Massachusetts Ave., NW
Washington, D.C. 20009

Fumihiko Togo (AMB)

U.S.: 10-1 Akasaka I-chome
Minato-Ku (107)

Tokyo, Japan

Tel: 583-7141

Telex: 2422118

U.S. Trade Center:

7th Flr., World Import Mart, 1-3

Higashi Ikebukuro 3-chome

Toshima-ku, Tokyo 170

Tel: 987-2441

Telex: 2722446

Chambers of Commerce:

The Japan Chamber of Commerce and
Industry

2-2, 3-chome

Marunouchi, Chiyodaku

Tokyo, Japan

Trade and Solar Interest Organizations:

International Solar Energy Society (ISES)

Japanese Section

Solar Research Laboratory

Government Industrial Research Institute

Karate Machi, Ki a-Ku

Nagaya 462, Japan

Tel: (052) 91102111 ext. 255

STATISTICAL PROFILE: JAPAN (Concluded)Trade Organizations (Contd.):

Japan External Trade Organization
(JETRO)

2-S Toranomom 2-chome

Minatu-Ku, Tokyo 107

(information for foreign firms, investigation of foreign markets, import promotion)

Trade Fairs:

Tokyo International Trade Fair Commission

7-24, 4-chome

Harumi, Chuo-Iai

Tokyo, Japan

STATISTICAL PROFILE: TAIWAN

Population (millions):	16.3	GNP (US\$ billions):	17.5
Per capita income (US\$):	NA	GNP per capita (US\$):	11,074
Primary language:	Mandarin Chinese	Energy production (quad Btu) ^a :	0.184
Urban/rural (%):	NA	Gross energy consumption ^a	
Literacy rate (%):	88	(quad Btu):	0.577
Monetary unit:	New Taiwan Dollar	Consumption per capita (MBtu) ^b	35.99
Population density		Energy Reserves:	
per sq. mile:	1,167	Oil ^c :	0.0522
per sq. kilometer:	450	Gas ^c :	0.06
		Trade with U.S.	
		From U.S. Imports:	961
		To U.S. Exports:	5,901

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Taipei:												
Lat.: 25° 02' N												
Long.: 121° 31' E												
Insolation	186	216	261	312	381	393	400	412	341	340	296	225
Temperature	15.2	14.8	16.9	20.6	24.1	26.6	28.2	27.9	26.2	23.0	19.8	16.8

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

No diplomatic representation

Chambers of Commerce:

General Chamber of Commerce of the Republic of China
 Rose Bldg., 4th Floor
 162 Hsin yi Rd.
 Section 3, Taipei, Taiwan

Chinese National Association of industry and Commerce
 4th Floor
 7 Roosevelt Rd.
 Section I, Taipei, Taiwan

STATISTICAL PROFILE: OCEANIA

Country	Population (million)	Per Capita Income (US\$)	Primary Language	Urban Rural (%)	Literacy Rate (%)	Monetary Unit	Population Density		GNP (US\$ million)	GNP Per Capita (US\$)	Production (quad Btu)	Gross Energy Consumption (quad Btu)	Energy Use Per Capita (MBtu)	Reserves (quad)		Trade (US\$)	
							(sq m)	(sq k)						Oil	Gas	Export	Import
Australia	14.1	6,709	English	86/14	98	Dollar	4.7	1.8	83.4	5,992	3.086	2.433	178.27	13.688	30.0	2,164	3,617
New Zealand	3.1	3,855	English	81/19	98	Dollar	30	12	13.1	4,193	0.1298	0.266	86.79	1.0034	6.1	708	530
Philip- pines	45.0	412	Filipino	32/68	80	Peso	371	143	17.8	415	0.0156	0.3848	9.20	0.0116	0.01	1,489	1,570

INSOLATION: OCEANIA^a

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Australia												
Darwin	442	458	481	440	451	436	458	529	550	557	531	484
Melbourne	643	542	315	290	215	176	190	240	336	434	468	536
New Zealand												
Invercargiu	528	445	313	193	125	86	115	181	287	389	465	321
Wellington	563	452	361	249	151	130	135	208	330	413	486	521
Philippines												
Quezon City	308	302	436	518	460	433	352	364	355	364	353	347

^aInsolation = langley per day (1 langley = 1 cal/cm² = 3.69 Btu/ft²).

STATISTICAL PROFILE: AUSTRALIA

Population (millions):	14.1	GNP (US\$ billions):	83.4
Per capita income (US\$):	6,709	GNP per capita (US\$):	5,992
Primary language:	English	Energy production (quad Btu) ^a :	3.086
Urban/rural (%):	86/14	Gross energy consumption ^a	
Literacy rate (%):	98	(quad Btu):	2.433
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b	178.27
Population density		Energy Reserves:	
per sq. mile:	4.7	Oil ^c :	13.688
per sq. kilometer:	1.8	Gas ^c :	30.0
		Trade with U.S.	
		From U.S. Imports:	3,617
		To U.S. Exports:	2,164

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Darwin:												
Lat.: 12° 26' S												
Long.: 130° 52' E												
Insolation	442	458	481	440	451	436	458	529	550	557	531	484
Temperature	83.6	83.4	83.6	83.9	81.4	78.5	77.2	79.1	82.5	84.9	85.7	85.0
Melbourne:												
Lat.: 37° 49' S												
Long.: 144° 58' E												
Insolation	643	542	315	290	215	176	190	240	336	434	468	536
Temperature	67.3	68.3	65.1	59.3	54.5	50.3	49.4	51.2	54.7	58.3	61.5	65.3

quad = quadrillion (10¹⁵).
 Insolation: langleys (1 langley = 1 cal/cm²).
 Temperature: daily mean centigrade.
^aBased on U.N. conversion of 7000 cal/gram.
^bF.A.S. transaction values.
^cQuads.

Embassies:
 Australia: 1601 Massachusetts Ave., NW
 Washington, D.C. 20036
 U.S.: Moonah Pl.
 Canberra, A.C.T. 2600,
 Australia
 V. Raymond Dickey (SCI)
 Tel: (062) 73-3711
 Telex: AA62104

Embassies (Contd.):
 U.S. International Marketing Center
 4 Cliff St.
 Milsons Point, Sydney, NSW 2061
 Tel: (02) 929-0977

Chambers of Commerce:
 International Chamber of Commerce
 (Australian Council)
 161 Clarence St.
 POB 5329
 Sydney NSW 2001, Australia

STATISTICAL PROFILE: AUSTRALIA (Concluded)Chambers of Commerce (Contd.):

Australian Chamber of Commerce
Brisbane Ave.
Barton, ACT 2600, Australia

Trade and Solar Interest Organizations:

International Solar Energy Society (ISES)
Headquarters
P. O. Box 52
Parkville, Victoria
3052
Australia

International Solar Energy Society (ISES)
Australian and New Zealand Sections
P. O. Box 26
Highette, Victoria
3190
Australia
Tel: 95-0333

Trade Organizations (Contd.):

Solar Energy Industries Association of
Australia
c/o Metal Trade Industry Association
165 Eastern Road
South Melbourne, Victoria
3805 Australia

Development Organizations:

Department of Natural Development
Tasman House
Hobart Place
P. O. Box 5
Canberra ACT 2000
Australia
(government organizations dealing with
national energy policy including planning
and research into coal, oil, gas, nuclear
and solar energy)

STATISTICAL PROFILE: NEW ZEALAND

Population (millions):	3.1	GNP (US\$ billions):	13.1
Per capita income (US\$):	3,855	GNP per capita (US\$):	4,193
Primary language:	English	Energy production (quad Btu) ^a :	0.1298
Urban/rural (%):	81/19	Gross energy consumption ^a	
Literacy rate (%):	98	(quad Btu):	0.266
Monetary unit:	Dollar	Consumption per capita (MBtu) ^b :	86.79
Population density		Energy Reserves:	
per sq. mile:	30	Oil ^c :	1.0034
per sq. kilometer:	12	Gas ^c :	6.1
		Trade with U.S.	
		From U.S. Imports:	530
		To U.S. Exports:	708

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Invercargiu:												
Lat.: 46° 25' S												
Long.: 168° 19' E												
Insolation	528	445	313	193	125	86	115	181	287	389	465	521
Temperature	56.3	56.3	53.9	50.4	44.9	42.0	41.0	43.1	46.8	50.4	52.6	54.9
Wellington:												
Lat.: 41° 17' S												
Long.: 174° 46' E												
Insolation	563	452	361	249	151	130	135	208	330	413	486	521
Temperature	61.2	61.6	59.7	56.3	51.6	47.9	46.5	47.9	50.3	53.1	56.0	59.1

quad = quadrillion (10¹⁵).

Insolation: langleys (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

New Zealand: 19 Observatory Circus, NW
Washington, D.C. 20008
Lloyd White (AMB)

U.S.: 29 Fitzherbert Ter,
Thorndon
P. O. Box 1190
Wellington, New Zealand
Tel: 722-068
Telex: NZ3305

Chambers of Commerce:

New Zealand Chamber of Commerce
Molesworth St.
Thorndon
POB 1071
Wellington I, New Zealand

Trade and Solar Interest Organizations:

The New Zealand Bureau of Importers and
Exporters Inc.
Parnell House
470 Parnell Rd.
Auckland, New Zealand

STATISTICAL PROFILE: NEW ZEALAND (Concluded)Trade Organizations (Cont.):

New Zealand Export-Import Corporation
Robert Jones House
I Willeston St.
POB 11332
Wellington, New Zealand
(Undertakes the export and import of
goods and sometimes acts as the govern-
ment's agent)

STATISTICAL PROFILE: PHILIPPINES

Population (millions):	45.0	GNP (US\$ billions):	17.8
Per capita income (US\$):	412	GNP per capita (US\$):	415
Primary language:	Filipino	Energy production (quad Btu) ^a :	0.0156
Urban/rural (%):	32/68	Gross energy consumption ^a	
Literacy rate (%):	80	(quad Btu):	0.3848
Monetary unit:	Peso	Consumption per capita (MBtu) ^b	9.20
Population density		Energy Reserves:	
per sq. mile:	371	Oil ^c :	0.0116
per sq. kilometer:	143	Gas ^c :	0.01
		Trade with U.S.	
		From U.S. Imports:	1,570
		To U.S. Exports:	1,489

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Quezon City:												
Lat.: 14° 40' N												
Long.: 121° 05' E												
Insolation	308	302	436	518	460	433	352	364	355	364	353	347
Temperature	—	—	—	—	—	—	—	—	—	—	—	—

quad = quadrillion (10¹⁵).

Insolation: langley (1 langley = 1 cal/cm²).

Temperature: daily mean centigrade.

^aBased on U.N. conversion of 7000 cal/gram.

^bF.A.S. transaction values.

^cQuads.

Embassies:

Philippines: 1617 Massachusetts Ave.,
NW

Washington, D.C. 20008
(AMB)

U.S.: 1201 Roxas Blvd.
Manila, Philippines
Tel: 598-011
Telex: 722-7366

Chambers of Commerce:

Chamber of Commerce of the Philippines
Magallanes Drive
Intramuroso
Manila 2801 Philippines

Chamber of International Trade
Room 914 L&S Building
1515 Paeo de Roxas
Metro, Manila

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SECTION 11.0

REFERENCES

Auldridge, Larry, Associate International Editor. "Worldwide Oil and Gas at a Glance." Oil and Gas Journal.

Landsby, H. E.; editor-in-chief. World Survey of Climatology. 15 vols. New York: Elsevier Scientific Publishing Company; 1976.

Lof, George O. G.; Duffie, John A.; and Smith, Clayton O. World Distribution of Solar Radiation. Engineering Experiment Station, Report No. 21. Madison, WI: Solar Energy Laboratory, University of Wisconsin; July 1966.

Showers, Victor, ed. World Facts and Figures. A unique collection of comparable information about cities, countries, geographic features of the world. Wiley-Interscience. New York: John Wiley and Sons, Inc.; 1979.

United Nations. Statistical Yearbook. 30th ed. New York: United Nations, 1979.

U.S. Department of Commerce, International Trade Division. United States Foreign Trade Annual, 1973-77. Prepared by the Office of Planning and Research. [International Marketing Information Series, Overseas Business Reports.] Washington, DC: U.S. Department of Commerce; July 1980.

World Almanac and Book of Facts. New York: Newspaper Enterprise Assoc., Inc.; 1980.

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SECTION 12.0**SOURCES FOR SPECIFIC INFORMATION**

Statistics are based on the following sources: items 1 (Population) and 2 (Per Capita Income) are from the U.N. 1978 Statistical Yearbook (30th ed.) 1979, pp. 68-74 and pp. 751-756; items 3 (Primary language), 4 (Urban/rural %), 5 (Literacy rate %), and 6 (Monetary Unit) are from The World Almanac and Book of Facts, 1980, pp. 513-599; items 7 through 12 are from World Facts and Figures, 1980; items 8 and 9 were originally based on figures from the World Bank, World Bank Atlas, 12th ed., 1977; items 10, 11, and 12 were originally based on figures from the United Nations Statistical Office; items 13 and 14 (Energy Reserves) are from World Energy Supplies, 1971-75, 1977; originally based on figures in the December 29, 1980 Oil and Gas Journal, pp. 78-179; items 15 and 16 (Export/Import Figures) are taken from the United States Foreign Trade Annual 1973-1979 and Overseas Business exports, July 1980.

For any given country, more recent or specific information may be available in a number of sources including those of that country's representatives. Very often, however this information is expressed in terms of that country's currency or various energy units, and its organization may make comparison difficult.

The publications we have used are as recent as possible, available generally, and reprinted yearly. The reader may wish to be aware of such publications as the Europa Year Book (a world-wide, country-by-country survey), International Financial Statistics (a yearbook published by the International Monetary Fund), and publications of the World Bank, in addition to those of the U.S. government.

SERI 

SECTION 13.0**MAILING PROCEDURES**

It is important that correspondence to a Foreign Service post be addressed to a section or position rather than to an officer by name. This will eliminate delays resulting from the forwarding of official mail to officers who have transferred. Normally, correspondence concerning commercial matters should be addressed simply "Commercial Section" followed by the name and correct mailing address of the post.

13.1 Sample Mailing Addresses

Below are the three accepted forms of addressing mail to a Foreign Service post using the Economic/Commercial Section of the American Embassy in Manama as an example:

International Address

Economic/Commercial Section
American Embassy
P.O. Box 26431*
Manama, Bahrain

Dept. of State Pouch Address

Economic/Commercial Section
Manama
Department of State
Washington, D.C. 20520

APO/FPO Address

Economic/Commercial Section
American Embassy
FPO New York 09526

NOTE: DO NOT COMBINE any of the above forms (e.g., international plus APO/FPO addresses). This will result in confusion and possible delays in delivery.

The Federal Government makes available two publications for the names of diplomatic personnel.

1. The Diplomatic List
2. Key Officers of Foreign Service Posts

These are available at no cost and are continually updated. However, the advice above is taken from these handbooks since personnel move frequently.

*Use street address only when P.O. Box is not supplied.

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SECTION 14.0

U.S. DEPARTMENT OF COMMERCE DISTRICT OFFICE LOCATIONS

City/State	City/State	City/State
ALBUQUERQUE, NM 87102 505 Marquette, N.W. Suite 1015 (505) 766-2386	ANCHORAGE, AK 99513 701 C. St. P. O. Box 32 (907) 271-5041	ATLANTA, GA 30309 Suite 600 1365 Peachtree St., NE. (404) 881-7000
BALTIMORE, MD 21202 415 U.S. Customhouse Gay and Lombard Sts. (303) 962-3560	BIRMINGHAM, AL 35205 Suite 200-201 908 S. 20th St. (205) 254-1331	BOSTON, MA 02116 10th Floor 441 Stuart St. (617) 223-2312
BUFFALO, NY 14202 1312 Fed. Bldg. 111 W. Huron St. (716) 846-4191	CHARLESTON, WV 25301 3000 New Federal Office Bldg. 500 Quarrier St. (304) 343-6181, Ext. 375.	CHEYENNE, WY 82001 6022 O'Mahoney Federal Center 2120 Capitol Ave. (307) 778-2220, Ext. 2151
CHICAGO, IL 60603 1406 Mid-Continental Plaza Bldg. 55 E. Monroe St. (312) 353-4450	CINCINNATI, OH 45202 10504 Federal Office Bld. 550 Main St. (513) 684-2944	CLEVELAND, OH 44114 Room 600 666 Euclid Ave. (216) 522-4750
COLUMBIA, SC 29201 Strom Thurmond Fed. Bldg., Suite 172 1835 Assembly St. (803) 765-5345	DALLAS, TX 75242 Room 7A5 1100 Commerce St. (214) 767-0542	DENVER, CO 80202 Room 165, New Custom House 19th & Stout Sts. (303) 837-3246
DES MOINES, IA 50309 817 Federal Bldg. 210 Walnut St. (515) 284-4222	DETROIT, MI 48226 445 Federal Bldg. 231 W. Lafayette St. (313) 226-3650	GREENSBORO, NC 27402 203 Federal Bldg. W. Market St., P. O. Box 1950 (919) 378-5345
HARTFORD, CT 06103 Room 610-B Federal Office Bldg. 450 Main St. (203) 244-3530	HONOLULU, HI 96850 4106 Fed. Bldg., P.O. Box 50026 300 Ala Moana Blvd. (808) 546-8694	HOUSTON, TX 77002 2625 Federal Bldg., Courthouse 515 Rusk St. (713) 226-4231

U.S. DEPARTMENT OF COMMERCE DISTRICT OFFICE LOCATIONS (Concluded)

City/State	City/State	City/State
INDIANAPOLIS, IN 46204 357 Federal Office Bldg. 46 E. Ohio St. (317) 269-6214	LOS ANGELES, CA 90049 Room 800 11777 San Vicente Blvd. (213) 824-7591	MEMPHIS, TN 38103 Room 710 147 Jefferson Ave. (901) 521-3213
MIAMI, FL 33130 Rm. 821, City National Bank Bldg. 25 W. Flagler St. (305) 350-5267	MILWAUKEE, WI 53203 Federal Bldg./U.S. Courthouse 517 E. Wisconsin Ave. (414) 224-3473	MINNEAPOLIS, MN 55401 218 Federal Bldg. 110 S. Fourth St. (612) 725-2133
NEW ORLEANS, LA 70130 432 International Trade Mart No. 2 Canal St. (504) 589-6546	NEW YORK, NY 10007 Room 3718, Federal Office Bldg. 26 Federal Plaza, Foley Sq. (212) 264-0634	NEWARK, NJ 07102 4th Floor, Gateway Bldg. Market St., Penn Plaza (201) 645-6214
OMAHA, NE 68102 Capitol Plaza, Suite 703A 1815 Capitol Ave. (402) 221-3365	PHILADELPHIA, PA 19106 9448 Federal Bldg. 600 Arch St. (215) 597-2850	PHOENIX, AZ 85073 Valley Bank Ctr., Suite 2950 201 No. Central Ave. (602) 261-3285
PITTSBURGH, PA 15222 2002 Federal Bldg. 1000 Liberty Ave. (412) 644-2850	PORTLAND, OR 97204 Room 618 1220 S.W. 3rd. Ave. (503) 221-3001	RENO, NV 89503 777 W. 2nd. St. Room 120 (702) 784-5203
RICHMOND, VA 23240 8010 Federal Bldg. 400 N. 8th St. (804) 782-2246	ST. LOUIS, MO 63105 120 S. Central Ave. (314) 425-3302	SALT LAKE CITY, UT 84138 1201 Federal Bldg. 125 S. State (801) 524-5116
SAN FRANCISCO, CA 94102 Federal Bldg., Box 36013 450 Golden Gate Ave. (415) 556-5860	SAN JUAN, PR 00918 Room 659 Federal Bldg. (809) 753-4555, Ext. 555	SAVANNAH, GA 31402 222 U.S. Courthouse P. O. Box 9746 125-29 Bull Street (912) 232-4321
SEATTLE, WA 98109 Room 706, Lake Union Bldg. 1700 Westlake Ave. North (206) 442-5615		

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SP-700



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DEPARTMENT OF ENERGY



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ATTN LIBRARY
1617 COLE BLVD
GOLDEN, CO 80401